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OF THE
MEDICAL OFFICER OF HEALTH
CITY OF GLASGOW

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P R E F A C E.

It is customary to preface the Annual Report by a brief reference to some of its principal contents.

Population.—This is estimated at 1,095,263 persons on the basis of the number of inhabited houses as returned by the City Assessor, and represents an estimated increase of 6,802 persons above the figure (1,088,461) of the 1931 census. This increase is approximately the same as the number by which the births exceeded the deaths. Reference was made in last year's Report to the factors responsible for the comparatively small growth of the population within the city boundary in recent years (3·5 per cent. during the ten years between the census of 1921 and that of 1931). The inhabitants of a city increase in proportion as the births exceed the deaths. In Glasgow, as elsewhere throughout the country, this margin is becoming smaller owing to the decline in the birth-rate, which has fallen from 27·6 in 1921 to 20·8 during the year under review.

Vital Statistics.—The general death-rate for the year was 14·7 per thousand of the population, which is slightly higher than the figure of 14·2, the rate for each of the two preceding years. As compared with the experience of last year, the rate for diseases of the circulatory system was slightly higher, malignant diseases (cancer, &c.) remained at much the same figure, while diseases of the nervous system were somewhat reduced. The general trend, in recent years, of these major causes of death has been in a continuously upward direction, owing to the fact that they are common in older people who nowadays form an increasingly high proportion of the population. It may be remarked that the administrative effect of this gradual alteration in the age constitution of the population has given rise to an increased demand for the institutional treatment of affections associated with old age, a demand which is felt in both general and mental hospitals. The other major causes of death, i.e., the infectious diseases and those of the respiratory system, vary from year to year, according to their prevalence. The former influence the vital statistics of young children, while the latter attack old and young alike. Last year the infectious diseases were relatively low, and the respiratory affections high in incidence.

The prevalence of pneumonia in the earlier part of the year and the occurrence of an epidemic of influenza in December caused an increase in the death-rate from diseases of the respiratory system, the rate being 2,495 per million of the population, as against 2,025 for the preceding year; the rate for influenza was 415 per million. On the other hand, the rate for infectious diseases fell to 977, as compared with 1,412 for the previous year, chiefly owing to an unusual absence of measles and a much diminished incidence of whooping-cough. The mortality from pulmonary tuberculosis was slightly higher at 890 per million, compared with 865. In contrast, the death-rate of the non-pulmonary forms of the disease attained the lowest level yet recorded—269 per million, as compared with 318 in 1931 and 337 in 1930. In this group of affections the death-rate from tubercular meningitis fell markedly—182 in 1930, 153 in 1931, and 134 in 1932—while a reduction is also noted in abdominal tuberculosis and in other forms of the disease.

Regional Certifying Clinic for the Blind.—This is conducted under the auspices of the Joint-Committee for the South-West of Scotland on the Administration of the Blind Persons Act. An important step taken during the year was a survey of all blind scholars attending the special classes in the schools. It has now been arranged that these children will be observed and certified by the clinic specialists in order to determine their degree of blindness and forecast their position relative to the Blind Persons Act. The clinic examines and certifies applicants for blind pensions, for increased Public Assistance grants, for technical training, for tramway passes, &c., and also blind persons referred by the Outdoor Mission to the Blind. Methods of collecting statistical data in such a way that they can be easily handled have been further perfected in order to provide reliable information as to the incidence and causes of blindness. In the Report an analysis is given of 1,460 cases attending the Clinic since it was reorganised in August, 1929, up to the end of 1931, along with the 400 who attended during the year. The work of the Clinic has attracted considerable attention, and its methods and results were described in a paper to the "Lancet" by Drs. C. M. Smith and J. Marshall.

Child Welfare.—The infant mortality rate, 112 per thousand births, was adversely affected by the prevalence of respiratory diseases during the year. Practically the whole of the increase over previous years was due to this and to digestive conditions, two causes of death which are interrelated. The respiratory diseases largely determine the gradations of the infant mortality rate of the city, and the experience of last year was an example of this fact. Observation showed that there was a tendency for

minor rickets to increase in volume during the winter months in certain districts of the city. Although this increase was noticeable, it was entirely confined to minor manifestations.

The various Child Welfare Clinics continue to run to full capacity. A new Clinic, known as the Blawarthill Clinic, was established in Dumbarton Road to serve the growing area of Scotstoun. It is being used jointly with the Education Health Service. Collaboration between the Maternity and Child Welfare Branch and the Education Health Service under Dr. Arbuckle Brown has continued in several useful directions, as described in the text of the Report. A conservative outlook is maintained as regards the operation for the removal of tonsils and adenoids. The Orthopædic Clinic is gradually increasing in utility as the result of experience. Its value lies in the fact that it focuses, in a central Clinic, the services of the trained physical instructor and the orthopædic surgeon on the problem of crippling defects in school and pre-school children. It works in close association with Mearns Kirk Hospital for Children and with the Royal Hospital for Sick Children. It provides outdoor facilities for remedial exercises, application and readjustment of splints, and facilities for muscle re-education, correcting exercises, massage, radiant heat, and electrical treatment. A close association with the Corporation hospitals has also been arranged for the detection and treatment of mastoid affections. Among other matters are the examination of blind children at the Regional Clinic and a survey of mentally defective children at the special Clinic for this purpose. Medicines required in the treatment of school children are dispensed, if need be, in the local dispensaries of the department. Arrangements for investigation by the Public Assistance Department into the circumstances of children receiving treatment are working smoothly.

Ante-Natal Consultations.—The total number of expectant mothers seeking ante-natal advice at the Corporation centres was 7,581, with 25,428 subsequent attendances, which is an increase in the primary attendances of 1,524 over the previous year. This very substantial increase in numbers is accounted for by the operation of the rule which makes it compulsory for midwives to send their cases for ante-natal examination and treatment to a medical practitioner, and by a reduction in the numbers attending the Royal Maternity Hospital owing to difficulties of accommodation there. Fewer cases attended the Maternity Hospital—5,017, as compared with 5,947 in 1931. The full effect of the rule of the Central Midwives Board is now being felt, although it is possible that these numbers will further increase. Considerable difficulty is being experienced, and some additional assistance will be required to meet the demand.

Maternal Welfare.—The questions raised by the immobility of the maternal mortality rate have been inquired into both nationally and locally. The problems are extremely difficult, and point to the need for a national maternity service. The maternal death-rate was 7·87 per 1,000 births, which is higher than that for last year, although lower than the corresponding rate for the three preceding years, 1928-30. The chief cause of this was a higher mortality from puerperal sepsis, there being 82 deaths, compared with 66, causing the rate to increase to 3·6 per thousand births. Accidents of pregnancy were about the same as last year, which was one-third of their volume in 1930. On the other hand, deaths from hæmorrhage rose slightly. Reference was made last year to the part played by the growing number of abortions. The admission of these to maternity hospitals is an increasing feature of their work. For instance, 597 cases of abortion were admitted to Corporation hospitals, equivalent to 19·4 per cent. of the total deliveries. In addition, 529 cases were treated in the Maternity Hospital during 1932, or 14 per cent. of the total deliveries.

Infectious Diseases.—The principal features were the continued high incidence of scarlet fever (9,158 cases) of mild type and a severe epidemic of influenza which occurred in December. The hospital accommodation was apportioned to the more severe and badly-housed cases by a process of selection based on home visitation by the inspectors and health visitors. Reference is made to a series of studies of the incidence, types, and treatment of lobar pneumonia, and to the results published in various medical journals. Enteric infections continue low in incidence, and Dr. C. M. Smith contributes a full account of their incidence and relation to the carrier problem.

Venereal Diseases.—A good deal of attention has been given to improving the methods of gauging the incidence and results of treatment of the venereal diseases. The subject is difficult, but certain tendencies may be noted. The number of patients with acute syphilis reporting at the Clinics for treatment continues to decline. The figures are as follows:—451 in 1929, 452 in 1930, 337 in 1931, and 307 in 1932, a fall entirely confined to male patients. There are reasons for believing that the figures represent a real reduction in incidence. As regards congenital syphilis, the reduction previously noted continues, the figures for patients commencing treatment being as follows:—351 in 1929, 250 in 1930, 270 in 1931, and 240 in 1932. An important table in the text shows that the number of cases of congenital syphilis in infants under one year has fallen from 138 in 1929 to 72 in 1932, and in children of one to five years from 87 to 18 between the same periods. As regards the late

manifestations of syphilis, chiefly of the nervous system, there is little doubt that these have declined in incidence, and Dr. R. J. Peters is making a special study of the results of the venereal disease scheme in this direction. Another point of interest is the distinct improvement in the proportion of those who default from treatment. In 1930, the proportion of male patients who failed to complete one course of treatment for acute syphilis was 48 per cent., while for 1932 the figure was 21·6 per cent. From the point of view of the communicability of the disease, this is encouraging, because "in the majority of cases one course of approved treatment extending over approximately three months would be adequate to render the patient non-infectious from the public health standpoint" in the opinion of the physicians at the Clinics. In contradistinction to syphilis, there is little evidence that gonorrhœa is tending to decline, although the results of treatment are of great value in the individual case. The symptoms, especially in women, are often slight and receive little attention by the patient. The great problem in the sphere of prevention is how to bring under treatment the woman suffering from syphilis or gonorrhœa in their early acute stages.

Housing.—Slum clearance and rehousing are reviewed by Dr. W. G. Clark. A total of 8,871 houses have been closed or demolished during the past ten years as the result of clearance schemes, closing or demolition orders, or condemnation as dangerous buildings. The number of houses occupied in the various rehousing schemes at the end of the year was 6,240, or 70 per cent. of the total demolished. Experience has shown that, as between tenants dispossessed and tenants rehoused, various factors are interposed. For instance, only 74 per cent. of the original tenants of closed houses take possession of new houses provided, while 12 per cent. of the new houses are occupied by way of substitution with other families. Again, it is found that the current rate of "re-lets" in the rehousing schemes is about 25 per month. While these are made use of to enable further closing orders to be made, a recent important decision of the Committee on Housing authorises that they may be also let to overcrowded families, preference being given to those in which there are tuberculous patients.

The standards of cleanliness, &c., in the rehousing schemes are satisfactory; indeed, in many of the schemes these are extremely high. Co-operation between the tenants and the supervising inspectresses of the department is maintained on a cordial and friendly basis in the great majority of cases. It is inevitable that, in the course of rehousing, a number of families are transferred who would prove unsatisfactory under any circumstances. This type of tenant tends gradually to vacate the new house and return to the slums, to the advantage of those

who remain. The general civic problem presented by the difficult and unsocial tenant may require special attention at some future date.

Housing conditions generally, as revealed by the census of 1931, have been minutely analysed by Mr. William Jones in a paper read before the Philosophical Society during last session, from which the following summarised facts are taken:—(a) *Sizes of Occupied Houses*.—The changes which have taken place in the relative proportion of houses of various sizes, abstracted from the Valuation Roll, are shown in the following important table:—

GLASGOW.—OCCUPIED HOUSES, 1921 AND 1931, ARRANGED
ACCORDING TO NUMBER OF APARTMENTS.

	1921.		1931.	
	Number.	Percentage.	Number.	Percentage.
1 apartment,...	43,753	18·6	38,756	14·8
2 apartments,...	112,688	47·8	114,015	43·7
3 " ...	44,594	18·9	61,964	23·7
4 " ...	15,111	6·4	23,701	9·1
5 " and up,	19,391	8·3	22,743	8·7
	235,537	100·0	261,179	100·0

Thus, of the total houses occupied in 1921, over 66 per cent. were of one and two apartments, and 25 per cent. of three and four apartments. The corresponding proportions are now 58 and 33 per cent. respectively. For this result the building programme of the Corporation is mostly responsible. (b) *Average Size of House*.—Another measure of improvement is the index figure of the average number of rooms per house at various dates. This figure increased from 2·514 to 2·676 between the 1921 and the 1931 census. (c) *Size of Family*.—The movement in the average number of persons per house is illustrated at various dates by the following figures:—

Date of Census.	1881.	1891.	1901.	1911.	1921	1931.
No. of Persons per House,	4·738	4·727	4·769	4·658	4·441	4·112

“ Since the seventies of last century the birth and death-rates had both been falling, but the difference between them—representing the natural increase of the population—had been maintained at round about 11 per thousand of the population, the result being a continuance of the average number of persons per family at a fairly uniform level. The drop between 1911 and 1921 can be directly attributed to war conditions, partly because of the numbers of men who were killed or died when absent from the country on war service, and partly to the greatly reduced number of births occurring during the war years. For

the period between 1921 and 1931, the general death-rate has been more or less stabilised in the neighbourhood of 15 per thousand persons living. In the same period, however, the birth-rate has fallen from an average of 28·5 to slightly over 21 during the past three years, so that the natural increase is now only about 6 per thousand, as against 11 per thousand formerly. The low number of persons per family, as recorded at the 1931 census, is therefore to be attributed to the rapid decline in the birth-rate during the war years, but especially since 1921, combined with a stationary death-rate."

(d) *Number of Persons per Room.*—Another method of expressing the influence of the above-mentioned factors on housing conditions is the number of persons per room, a figure of great social and public health importance. The following comparison covers the same period as before:—

Date of Census.	1881.	1891.	1901.	1911.	1921.	1931.
No of Persons per Room,	2·040	2·033	1·846	1·827	1·766	1·536

"Until 1921 the fall may be ascribed to the inclusion, by extension within the city boundaries, of residential areas which contained a greater proportion of larger-sized houses than the city generally. The increase in the number of rooms per house since 1921, combined with the fall in the number of persons per family already referred to, accounts for the low figure in 1931. The public health significance of these recent movements is thus apparent."

(e) *Persons per Room according to Size of House.*—The following table carries the inquiry as to the occupancy of houses into the different sizes of house of which the city is composed:—

GLASGOW.—COMPARISON OF NUMBER OF PERSONS PER ROOM AT
VARIOUS PERIODS, ACCORDING TO SIZE OF HOUSE.

Size of House.			1891.	1901.	1911.	1921.	1931.
All Sizes,	...	...	2·033	1·846	1·827	1·766	1·536
1 apartment,	...	...	3·232	3·183	3·196	3·248	3·102
2 apartments,	...	...	2·475	2·463	2·432	2·361	2·093
3	..	...	1·839	1·803	1·734	1·581	1·454
4	..	...	1·407	1·332	1·254	1·135	1·098
5	..	and up,	0·882	0·787	0·761	0·679	0·680

"Until 1911, except in the houses of four apartments and over, there was little evidence of reduction in the number of persons per room when thus arranged. All groups, however, show improvement since that date, other than the one-apartment houses. The outstanding feature of the table is that the average number of persons occupying the one-apartment house has remained practically constant throughout the whole period and still shows little indication of improvement. The single-apartment may be sufficiently commodious to meet the require-

ments of a husband and wife and one or maybe two young children, but the tendency among many families is to remain in the single-apartment, notwithstanding increase in the number of the family and the passage of infants through childhood to adult ages. It is probably among this group, also, that the fall in the birth-rate has been less marked than among other groups of the population. It might have been assumed that slum clearances, including as they do a substantial proportion of one-apartment houses, would have resulted in a lessening of the number of persons in the one-apartment family. Selection of houses for demolition, however, is based on structure and not on occupancy, so that, as the table proves, the remaining houses still maintain the comparatively high average number which characterises the one-apartment dwelling."

(e) *Overcrowding*.—A measure of the volume of overcrowding as at the 1931 census is afforded by the following table, which gives the population occupying houses of various sizes, the percentage of these houses occupied in excess of three persons per room, and the percentage of their population to which this standard of overcrowding applies:—

GLASGOW, 1931.—NUMBER AND PERCENTAGE OF HOUSES OCCUPIED BY MORE THAN THREE PERSONS PER ROOM AND POPULATION.

		No. of Houses occupied more than 3 per Room.	Population occupying these Houses.	Percentage of Houses occu- pied more than 3 per Room.	Percentage of Population living more than 3 per Room.
1 apartment,	...	12,931	64,858	34.7	56.2
2 apartments,	...	15,042	119,535	13.5	25.6
3	..	1,336	14,348	2.2	5.4
4	..	58	801	0.3	0.8
5	..	4	72	—	—
		29,371	199,614	11.5	19.0

This survey of the influence upon housing conditions of the various recent social movements (chief of which is the declining birth-rate) and of administrative action (chief of which is the Corporation's housing programme) is summed up in the following table:—

GLASGOW.—NUMBER OF PERSONS PER ROOM—1921 AND 1931 COMPARED.

Persons Living (per Room).	Population.		Percentage of Population in each Group.	
	1921.	1931.	1921.	1931.
Not more than 2, ...	465,521	607,439	46.0	57.7
2—3, ...	266,821	246,205	26.3	23.4
3—4, ...	164,331	120,347	16.2	11.4
More than 4, ...	116,282	79,267	11.5	7.5
	1,012,955	1,053,258	100.0	100.0

Between 1921 and 1931 the proportion of the population housed not more than two per room has increased from 46 to almost 58 per cent., while the proportion housed not more than three per room has increased from 72 to 81 per cent. Stated otherwise, the proportion of the population living more than two persons per room has fallen from 54 per cent. in 1921 to 42 per cent. in 1931. Whatever view may come to be taken of one of the responsible factors, the descent of the birth-rate, these are striking figures of importance as regards the city as a whole.

The Milk Supply.—As regards the quality of the general milk supply, the average butter fat content in any month rarely falls below 3·5 per cent., and is occasionally as high as 4 per cent. This may be regarded as due to three factors—(1) improved quality of milk as produced, (2) the effect of bulking before distribution, (3) the influence of bottling of milk, a procedure which removes the possibility of carelessness in dipping when milk is sold loose. A small increase has taken place in the sale of Certified and Grade “A” (Tuberculin-Tested) milk, but the total sales of these two grades to the public remain small at 1,268 gallons per day. It is estimated that Glasgow consumes daily about 65,000 gallons of milk, of which two-thirds are pasteurised (unofficially) by holding methods, while of the remaining third (about 20,000 gallons approximately) half is “flash” pasteurised and half consumed raw. There are about twenty distributing firms dealing with quantities varying from 1,000 to 7,000 gallons daily. The results of the examination of market milk for the presence of bacteria indicate that 70 per cent. of the samples were comparable in purity with milk of Grade “A” quality, while in many cases still higher standards were reached.

The special investigation into tubercle bacilli in milk, conducted simultaneously in the four large cities of Scotland, was concluded in Glasgow at the end of March, 1932. The results show that of 329 samples of raw milk taken while the milk was in transit and before distribution, 14·6 per cent. gave positive results for living tubercle bacilli. Of milk as retailed, 9 per cent. were positive out of 200 samples, while of 348 samples of pasteurised milk 6 were positive. Of these pasteurised samples, 4 were in respect of milk heated by the “flash” method of pasteurisation and 2 were in respect of milk pasteurised by the holder process. In one case the milk was retained at 145°F. for only twenty minutes, and in the other case the result was positive in the second guinea-pig inoculated. These results demonstrate the value of proper methods of pasteurisation as a safeguard against the bovine tubercle bacillus. The position as regards pasteurisation may be stated as follows:—

Objections have been raised to the principle of pasteurisation

and to its further extension as a preventive policy. There are two principal criticisms which have a bearing on public health:—

(1) If pasteurisation were enforced, producers would have little incentive to produce clean milk. The history of milk production would appear to afford a sufficient answer to this objection. As a matter of fact, pasteurisation, which has been practised on a large scale for several years by milk distributors in many towns, has not prevented the undoubtedly great improvement which has taken place in the general quality of the milk produced and distributed, and there is no reason why the administration of the milk regulations need, in consequence, be relaxed in producing areas. Protection of the consumer implies the use of all known methods of safeguarding the milk supply, among which pasteurisation is to be regarded as a final measure and not as an alternative to the production of clean milk.

(2) The second main criticism is that pasteurisation seriously impairs the nutritive qualities of raw milk. This would be a grave objection if it were clearly substantiated. Present knowledge and experience, however, point to the fact that such changes as occur in the composition of milk during pasteurisation are small, are negligible where milk is not the sole food, and are otherwise easily remedied in practice by the simple addition of orange juice or, if need be, cod-liver oil. It should be added that criticism of pasteurisation on nutritional grounds must take into account the existing extensive use of pasteurised milk for infants and young children, and the absence of any detectable deterioration in their general condition. The "Memorandum on Bovine Tuberculosis in Man," issued by the Ministry of Health in 1931, sums up the position as follows:—"The problems and procedures of pasteurisation have been reviewed, and it has been shown that, subject to careful operation and scientific control, this process ensures a milk which is not only safe for consumption, but also retains its food value practically unimpaired by the heat to which it is subjected." The remit of the Corporation to the Committee on Parliamentary Bills that "all milk brought into or produced within the city for human consumption shall, unless it comes within the category of Certified or Grade 'A' (Tuberculin-Tested) milk, be efficiently pasteurised before distribution," &c., has not been proceeded with in the meantime.

Air Purification.—The total deposit in tons per square mile has decreased from 278 in 1929 to 234 in 1932, a result which is, no doubt, due in part to industrial depression, but also in some degree to a reduction in concentrated pollution by domestic fires following the clearance of congested areas in the city. Improvements made to industrial plant in the direction of smoke abatement were fairly satisfactory even in these bad times, and certain firms made considerable alterations. The river and docks

are now subject to routine and special observation, and a number of ocean-going vessels and river craft received attention; in two instances prosecutions were resorted to, with convictions in both cases. Continued success has attended the classes in Smoke Abatement, Boiler Efficiency, and Furnace Management conducted by the Chief Smoke Inspector under the auspices of the Scottish Branch of the National Smoke Abatement Society and of the Corporation of Glasgow. There were 92 enrolments in these classes.

Sanitation.—The reports of the divisional sanitary inspectors are descriptive of a large variety of activities. Two changes are gradually taking place in the sanitary work. The clearance of insanitary areas has reduced, to some extent, the volume of concentrated nuisances requiring attention, and has enabled some reduction of staff to be effected. At the same time, more highly-skilled work and more technical knowledge are demanded of the modern sanitary inspector, and this has been kept in view in the recruitment of the staff. In the South-Eastern Division an improvement has taken place in the conditions under which hen-plucking and killing for the Jewish community has been carried on. For this purpose new central premises have been acquired and reconstructed. The Inspector for the South-Western Division contributes a full account of the occupancy and social conditions of 615 one-apartment houses investigated in 1931 and again in December, 1932. The information obtained shows that a very considerable ebb and flow of population takes place in these small houses; in fact, 38 per cent. of the tenants had removed between these dates, some proceeding to larger houses and others coming from larger houses. The census of 1931 showed that the one-apartment house was unique in that it was most liable to overcrowding. The question of regulation of occupancy will require attention when the housing situation of the poorer classes becomes easier. In the various Divisions instances of reconstruction of larger houses into smaller dwellings have been reported, and special observations are being made on this important tendency.

General Hospitals.—A full review of the work of the general hospitals was included in the Report for last year. The principal feature of 1932 was the increased demand on hospital beds, in great part owing to the economic situation. The numbers treated increased by 25 per cent. in 1932, as compared with 1931, and in December during the influenza epidemic the difficulty of accommodation became acute. For similar reasons, there was exerted very high pressure on the outdoor medical service. The reconstructed and enlarged maternity block at Stobhill was in use during the year. Details of the pressure on

these services and the types of patient treated, along with other particulars, will be found in the section of the report on Hospitals, &c.

Mental Service.—The difficulty of finding accommodation in the mental hospitals is becoming more and more acute for reasons given in the successive reports on this section of the work. Reference may again be made to the proved value, both medically and in the public interest, of the mental observation wards at the various hospitals. No less than 1,954 patients were treated, of whom 423, or less than 22 per cent., were sent to asylums while 1,083 were discharged to their homes, and 200 died. Many of the cases were of the senile type, who were unsuitable for treatment at home or in the ordinary wards of a general hospital. The presence of these patients and also of mental defectives, for whom other accommodation cannot be found without long delay tends to embarrass the administration of these wards. The malaria treatment of general paralysis (34 cases) has been continued with good results.

The foregoing paragraphs are intended to call attention to certain selected features of public health work and administration which are engaging special attention. In presenting this Report, I desire to acknowledge the services of the various contributors. Mr. William M'Kean, Assistant Secretary to the Department, has, as usual, given much time and care to its preparation and arrangement, while the services of various members of the staff should receive mention.

A. S. M. MACGREGOR,

Medical Officer of Health.

PUBLIC HEALTH DEPARTMENT,
GLASGOW, 12th July, 1933.

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REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR

1932

PART I

SECTION I.

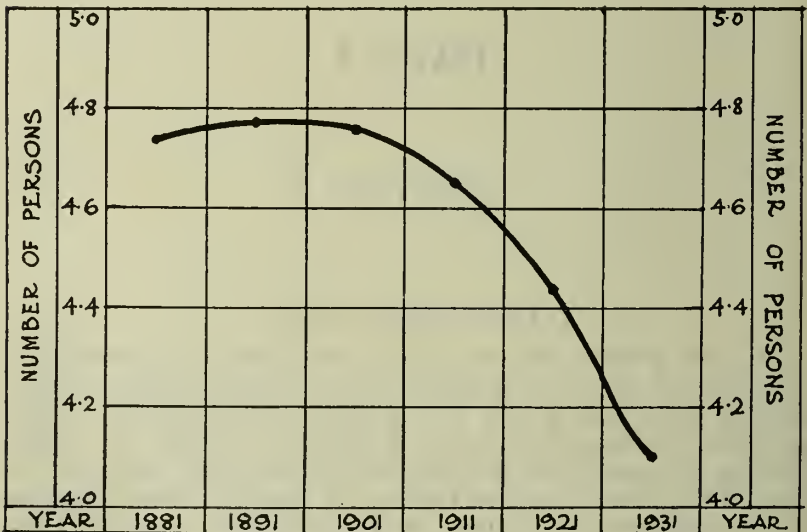
POPULATION, &c.

In the Annual Report of last year, there was included a summary of the 1931 Census Report (issued in May, 1932), dealing with such points as sex and age distribution of the population, conjugal condition, birthplace, housing, &c. After making allowance for the extension of the city boundary in May, 1926, there was found to be an apparent small decrease in the population, equivalent, on the average, to about 4,000 per annum. The natural increase from the excess of births over deaths during the decennium, 1921-31, was approximately 8,800, so that there has been an apparent loss each year of about 4,800 persons.

The estimated population of the city as at June, 1932, is 1,095,263, based on the return of inhabited houses supplied by the City Assessor. Compared with the census population of the previous year, 1,088,461, there is thus an indicated increase of 6,802 persons. This increase is 141 more than the excess of births over deaths in 1932, namely, 6,661 persons.

Although an extension of the boundary added a small area and a small population to the city (63 at the last census), the progressive reductions in the population shown in Table XXIV in the Appendix were the results of adjustments made last year in view of the reduced population enumerated at the census. The figures now given show a slight increase in the estimated population, as these are based on the number of inhabited houses and the average number of persons per house obtaining at the census. This latter figure is of considerable importance in connection with present-day housing and public health problems, and a chart is here introduced to show the variations which have occurred during the past half-century.

GLASGOW.—DIAGRAM SHOWING NUMBER OF PERSONS PER HOUSE AT EACH CENSUS SINCE 1881.



In 1922 a diagram was published showing that the trend of the curve was towards a factor of about four persons per house. It was, however, not expected that the fall would be so

rapid as it has been during the past decennium, as an actual ratio of 411 persons per house was disclosed by the recent census. Since the beginning of the present century there has been a reduction in the average number of occupants per house of nearly fifteen per cent. This reduction may be largely explained by the decrease in the number of births, the birth-rate of recent years being fully thirty per cent. less than it was thirty years ago, and more recently by the growth of attractive housing accommodation of a higher standard.

Ward Populations.—The distribution of the population in municipal wards is shown in Table I of the Appendix. The wards with the largest populations are Whiteinch with 58,304, Gorbals with 45,860, Provan with 42,658, and Ruchill with 42,001, while Shettleston and Tollcross has 41,190. The first of these, Whiteinch, was divided into two municipal wards, the new part now being known as Ward 38 (Yoker and Knightwood), but, as the change did not take place until November, the old ward area of Partick and Whiteinch has been retained for the purposes of the vital statistics given in this report. In the cases of Provan, Ruchill, and Shettleston and Tollcross, the increases of recent years have been rapid because of house building, mostly by the Corporation.

The largest increases in ward populations are 4,368 in Cathcart, due to the rapidly increasing suburb of King's Park; 1,940 in Pollokshaws; 1,874 in Whiteinch; and 1,746 in Kelvinside. Decreases were shown as follows:—4,454 in Calton, owing to the demolition of slum property; 1,072 in Park; and 971 in Gorbals.

Institutional Population.—The total number of persons resident in institutions, as obtained by a special census taken at 30th June, was 31,917, which compares with 31,318 for the previous year, an increase of 599. The ward distribution of the institutional population is contained in Appendix Table I, which also gives the number resident in ships as returned at the census.

Acreage.—The area of the city is now 30,046 acres, an increase of 535 acres. The wards affected are Shettleston and Tollcross, which was increased from 1,022 to 1,061 acres; Provan, which was increased from 1,284 to 1,293 acres; and Springburn, which was increased from 2,261 to 2,748 acres. These extensions followed an application for an acquisition of ground in Shettleston and Tollcross and Provan Wards to take in an area of 48 acres on which has been erected the Carntyne Corporation Housing Scheme, while in Springburn the ground acquired included Hogganfield Loch and an area of land surrounding

it which was purchased for a public park and some adjoining ground to the north-east which belonged to the Corporation. These extensions took effect as from 15th May, 1931.

The acreage given in the Census Report for Glasgow in 1931 is 28,694, whereas the acreage returned for local purposes was 29,511, the difference being 817 acres. It appears that this difference is due to the fact that the Census Report embraces land only, whereas the local figure includes inland and tidal waters and foreshore.

Density.—These alterations reduced the density from 37 to 36 persons per acre. The ward with the highest density is Woodside, where there are 194 persons to the acre, this being a ward with practically no vacant ground or open spaces. Gorbals comes next with 182, followed by 155 in Townhead and 144 in North Kelvin. The lowest density occurs in Pollokshields with six persons per acre, and Springburn with nine, because of the large extent of unbuilt-on ground, mostly added at the 1926 extension. There were thirteen persons to the acre in Pollokshaws and nineteen in Maryhill.

Inhabited and Empty Houses.—In Table II in the Appendix the numbers of inhabited and empty houses in each municipal ward are given according to a return supplied by the City Assessor and a comparison of the former with the respective numbers for the preceding year. The total number of inhabited houses is now 263,321, an increase of 2,142 during the year, compared with an increase of 1,778 for the preceding year. This increase is largely due to the building activities of private enterprise in the King's Park district of Cathcart, where 1,062 additional houses are in occupancy, or over thirteen per cent. on the total at Whitsunday, 1931. In Pollokshaws the increase is 400, in Whiteinch 354, and in Maryhill 267, where Corporation Housing Schemes are situated. The largest decrease occurs again in Calton Ward, where the number of occupied houses is lower by 784, which, with 519 shown in the Report for last year, makes the total 1,303, almost all of which are houses closed and demolished in connection with the large rehousing scheme undertaken by the Corporation in that district. Other decreases were 94 in Gorbals and 80 in Blythswood.

The total number of one-apartment houses now in the city is 38,363, compared with 38,910 in 1931, and almost 44,000 ten years ago. The decreases are almost entirely due to the large number of slum houses which have been demolished in recent years.

In Appendix Table II is also given the ward distribution of unoccupied houses. These at Whitsunday, 1932, numbered 2,231, compared with 1,917 for the preceding year.

The largest number of empty houses occurs in Park Ward, 236, of which 160 are houses of five and more apartments. The following summary shows the number and type of empty houses as returned for recent years and for pre-war years:—

NUMBER OF UNOCCUPIED HOUSES CLASSIFIED ACCORDING
TO NUMBER OF APARTMENTS.

	Old City.		Extended City.				
	1913	1921	1928	1929	1930	1931	1932
One Apartment, ...	4,169	33	54	125	204	154	132
Two Apartments, ...	9,762	17	27	162	324	155	153
Three „ ...	2,731	9	33	198	494	263	295
Four „ ...	954	8	46	163	498	443	559
Five „ and up,	1,094	76	213	477	759	902	1,092
	18,710	143	373	1,125	2,279	1,917	2,231

Dean of Guild Linings.—In Table III in the Appendix is given a summary of the linings granted by the Dean of Guild Court since 1919, which reflects the extent of house building since the war. For the year to 31st August, 1932, linings numbered 5,351, compared with 4,306 during the previous year, the largest number since 1928. The linings for 33 one-apartment houses were in respect of hostels for women in the Corporation Housing Schemes at Carntyne and East Keppoch. More two and especially three-apartment houses are now being provided in Corporation Schemes, 529 of the former and 3,464 of the latter, comparing with 122 and 2,220 during the previous year.

METEOROLOGY.

The weather during the year 1932 was comparatively mild and open and on the whole favourable. There was less frost than usual, the lowest temperature recorded being 25°F., which occurred in both February and March, compared with 19°F. (in March), the lowest recorded in the previous year. On the other hand, the highest temperature was 83°F. registered in June, whereas in 1931 the highest was 73°F. in August. The average temperature for the year, 47·3°F., is 0·8°F. above that of the preceding year, and in the past ten years this mean has only been exceeded in 1926 and 1930.

The total amount of rainfall recorded, 42·98 inches, is only fractionally less than the amount in 1931. The rainfall has remained remarkably uniform around 43 inches during the past four years. Rain was recorded on 223 days, which is

considerably below the average of the past ten years, 1925 alone, with 222, having fewer wet days. This favourable comparison is largely attributed to the low records of February and June, the former especially, with only four wet days and less than one-tenth of an inch of rainfall. Snow was negligible.

Hours of bright sunshine numbered 1,126, a record which is better than that of the two previous years, but less than the average of 1,194 for the past ten years. June, with 210 hours, had almost double, and August, with 100 hours, about half the respective amounts in 1931.

HEALTH LECTURES.

Central Health Lectures.—The Health Committee continued to co-operate with the Glasgow Burgh Insurance Committee, the Scottish Committee, and the Glasgow Branch of the British Social Hygiene Council in organising courses of lectures on health subjects of interest to the public generally, and especially to those interested in welfare and social work. During the winter of 1932-33 a central course of four lectures was arranged, of which the following are particulars. The estimated attendances total 3,300:—

Date.	Subject.	Lecturer.	Estimated Attendance.
Oct. 25,	" Nutrition and Health," ...	Prof. E. P. Cathcart, ...	400
Nov. 22,	" Education in Sex Hygiene," ...	Dr. Robert Forgan, ...	1,000
Jan. 17,	" Microbes and Man," ...	Prof. J. Graham Kerr, ...	900
Feb. 7,	" Cancer,"	Prof. A. Young, ...	1,000

District Lectures.—The following district health lectures were undertaken by members of the staff, in addition to many others given to local organisations such as Trade Union Societies, Welfare Guilds, Church Guilds, &c. The following are the particulars of the district lectures organised by the Committee:—

Date.	Where held.	Lecture.	Estimated Attendance.
Nov. 24	Bridgeton, ...	" Slum Dwellings and Housing," by Dr. W. G. Clark, ...	450
Dec. 20,	Shettleston, ...	" Sex Hygiene and Venereal Disease," by Dr. R. J. Peters, ...	500
Dec. 21,	Kingston, ...	" Psychology in Child Training," by Dr. Laura Mill, ...	250

At all of these lectures films of an educational nature on health subjects were shown.

LEGISLATION.

During the year the following Acts of Parliament and Regulations, &c., dealing directly with Public Health or having a bearing thereon came into operation:—

ACTS OF PARLIAMENT, 1932.

Children and Young Persons (Scotland) Acts, 1932.—Makes further and better provision for the protection and welfare of the young and the treatment of young offenders.

Public Health (Cleansing of Shellfish) Act, 1932.—Enables local authorities to provide or contribute towards the provision of means for cleansing shellfish.

CIRCULARS, ORDERS, REGULATION, &C., ISSUED DURING 1932.

Welfare of Blind.

Circular No. 23, dated 28th March, 1932.—Registration of Blind Persons.

Maternity and Child Welfare.

Circular No. 28, dated 13th December, 1932.—Infant Life Protection.

Children and Young Persons (Scotland) Act, 1932 (Date of Commencement Order No. 1), dated 27th October, 1932.

Memorandum No. 36, dated 23rd August, 1932.—Training and Examination of Health Visitors.

Infectious Diseases.

Circular No. 36, dated 19th December, 1932.—Public Health (Infectious Diseases) Regulations (Scotland), 1932.

Memorandum regarding Duties of Medical Practitioners under the Public Health (Infectious Diseases) Regulations (Scotland), 1932.

Regulations, dated 9th December, 1932.—Prevention of Epidemic, Endemic, and Infectious Diseases.

Silicosis.

Regulations, No. 393, dated 24th May, 1932.—Pottery (Silicosis).

Memorandum, dated July, 1932, on the Industrial Diseases of Silicosis and Asbestosis.

Venereal Diseases.

List of Approved Arsenobenzene Compounds, dated June, 1932.

Food.

Public Health (Imported Food) Regulations (Scotland), 1932.

Public Health (Meat) Regulations (Scotland), 1932.

Official Certification of Meat and Meat Products Intended for Export to the United States of America, dated June, 1932.

Circular, dated 4th April, 1932.—Grade A (Tuberculin-tested) Milk.

Fertilisers and Feeding Stuffs Regulations, dated 11th August, 1932.

Circular, dated 31st August, 1932, regarding Revision of Regulations.

Rats.

Order No. 154, dated 1st April, 1932.—Musk Rats (Importation and Keeping) Regulations.

BLIND PERSONS ACT, 1920.

MEDICAL CERTIFICATION OF BLIND PERSONS.

The following report is by Dr. C. M. Smith, the medical officer in administrative charge of the Regional Certifying Clinic:—

The number of applicants examined during 1932 is less than in the two preceding years. It is to be remembered that those who were on the Register of Blind Persons before the institution of the Regional Blind Clinic in August, 1929, are only examined when application is made for one or other of the benefits to which blind persons are entitled under the Act. Apart from these examinations, no systematic review of persons already on the Register has been made.

Examination of School Children.—During the year children attending blind classes in Glasgow were examined by the ophthalmic surgeons attached to the Clinic by arrangement with the Education Health Service. This examination follows the recommendation of the Joint-Memorandum of the Department of Health for Scotland and the Scottish Education Department of October, 1931, that all children being educated as blind pupils should be reviewed at the Certifying Clinic to forecast, at as early a date as possible, their position relative to the Blind Persons Act. In the past, on account of the different standard of blindness adopted for educational purposes, it has been possible for a child educated in a blind class to be certified not blind when examined in connection with an application for technical training in a Blind Asylum. The total number of blind children examined was 55, of whom 48 were found to be blind. With regard to the seven scholars who were found not blind, no action was taken in the case of two who were leaving school shortly. Two other children who were also due to leave school at an early date were allowed to remain in the blind class, but "sighted" methods of education were substituted. One child was transferred from the blind class to the sight-saving class, and in respect of the remaining two children special arrangements were made. The education of children whose vision is just outwith the category of blindness presents a problem of some

difficulty, but the policy has been adopted of admitting these scholars to a sight-saving class on the assumption that if such a pupil cannot be certified blind within the meaning of the Blind Persons Act, then *ipso facto* there should be a sufficient degree of visual acuity to enable him to benefit by education in a sight-saving class.

The causes of blindness among the 48 school children certified blind are as follows:—

Ophthalmia Neonatorum, ...	12	Congenital Anomalies, ...	7
Tubercular Meningitis, ...	1	Sympathetic Ophthalmia, ...	1
Congenital Syphilis, ...	7	Tumour of Globe, ...	2
Specific Fevers, ...	4	Developmental Defects, ...	3
Meningitis, ...	4	Phlyctenular, ...	1
Non-Industrial Trauma, ...	2	Other General Infectious Diseases, ...	2
Acute Septicæmia, ...	1	Not ascertainable, ...	1
Total, ...			48

It will be noted that ophthalmia neonatorum, congenital syphilis, and congenital anomalies are the three most important causes of blindness in this group of Glasgow school children. Venereal diseases account for almost 40 per cent. of all cases.

Work of the Regional Clinic.—During the year there were examined for the first time 629 applicants at the clinic and 82 at home, a total of 711 persons. In addition, 145 candidates were re-examined, making for the year a total of 856 cases examined. In 1931 there were examined 910, which, with 147 re-examinations, made a total of 1,057 cases examined. Thus, compared with the previous year, there was in 1932 a fall in the number of applicants examined for the first time, while the numbers re-examined remained practically the same. Of the 711 candidates examined, 400, or 56·3 per cent., were certified blind within the meaning of the Act. The proportion of cases certified blind in 1929 was 74 per cent.; in 1930, 71 per cent.; and in 1931, 61·9 per cent.

Source of Candidates.—The source of candidates is shown in the following statement:—

Applicants for Blind Pension, ...	270
Applicants for increased Public Assistance, ...	93
Applicants for Technical Training, ...	87
Applicants for free Tramway Pass, ...	39
Applicants referred by Mission to Outdoor Blind, ...	168
Unclassified, ...	54

It will be noted that the largest number of candidates was examined in connection with applications for Blind Pensions.

TABLE I.

SHOWING THE AGE AND SEX INCIDENCE OF APPLICANTS CLAIMING TO BE BLIND EXAMINED AT THE CERTIFYING CLINIC DURING THE YEAR 1932.

Age.	Certified.			Rejected.		
	Males.	Females.	Total.	Males.	Females.	Total.
-1, ...	—	—	—	—	—	—
1-4, ...	1	2	3	—	—	—
5-15, ...	16	14	30	3	1	4
16-29, ...	21	20	41	38	19	57
30-39, ...	16	10	26	19	8	27
40-49, ...	29	18	47	19	9	28
50-59, ...	40	37	77	43	27	70
60-69, ...	48	52	100	68	40	108
70+, ...	39	37	76	9	8	17
	210	190	400	199	112	311

From the above table, it will be noted that 448 of the candidates, that is 63 per cent., were over 50 years of age, as compared with 71 per cent. in 1930 and 67·8 per cent. in 1931. As in the three previous years also, male applicants outnumbered female.

TABLE II.

SHOWING THE ALLOCATION OF THE APPLICANTS EXAMINED DURING 1932 AT THE CERTIFYING CLINIC AMONG THE LOCAL AUTHORITIES COMPOSING THE JOINT-COMMITTEE FOR THE BLIND FOR GLASGOW AND THE SOUTH-WEST OF SCOTLAND.

	Certified.			Rejected.		
	Males.	Females.	Total.	Males.	Females.	Total.
Glasgow, ...	95	100	195	104	45	149
Airdrie, ...	5	4	9	4	4	8
Coatbridge, ...	4	4	8	11	13	24
Hamilton, ...	4	4	8	2	3	5
Motherwell and Wishaw,	8	4	12	7	7	14
Rutherglen, ...	3	3	6	1	—	1
Other Lanarkshire, ...	32	19	51	22	11	33
Greenock, ...	10	8	18	9	9	18
Paisley, ...	5	2	7	8	1	9
Port-Glasgow, ...	2	—	2	2	2	4
Other Renfrewshire, ...	5	3	8	2	2	4
Dumbarton, ...	2	2	4	1	1	2
Clydebank, ...	2	3	5	3	2	5
Other Dunbartonshire, ...	7	4	11	3	3	6
Falkirk, ...	2	2	4	—	—	—
Stirling, ...	—	3	3	—	—	—
Other Stirlingshire, ...	9	4	13	2	1	3
Ayr, ...	4	6	10	1	2	3
Kilmarnock, ...	1	1	2	4	2	6
Other Ayrshire, ...	7	8	15	6	1	7
Argyll County, ...	1	2	3	3	—	3
Bute County, ...	—	—	—	—	—	—
Dumfries Burgh, ...	2	4	6	4	3	7
Not stated, ...	—	—	—	—	—	—
Total, ...	210	190	400	199	112	311

It will be observed that 344, or 48 per cent., of the applicants examined resided in Glasgow. In 1929, 48 per cent. of the applicants lived in Glasgow, the corresponding figures for 1930 and 1931 being 65 per cent. and 51 per cent.

Causes of Blindness.—The causes of blindness of the 400 accepted cases during the year are shown below in column A. The largest number is included in the category "Congenital and Undetermined." As in previous years the most important individual causes of blindness are myopia, cataract, glaucoma, venereal diseases, and chronic septicæmia. In column B of the table there is included a statement of the causes of blindness of 1,460 cases certified blind from the opening of the clinic in August, 1929, until the end of 1931. Reference was made to these cases in an article on the work of the Glasgow Clinic, published in the "Lancet" of 9th and 16th July, 1932, by Drs. C. M. Smith and John Marshall. The paper also included an account of the methods that have been evolved for the collection and the analysis of statistics on the causes of blindness. The underlying principle of the method is that practically all data are so set down on the medical case sheet as to be capable of being easily translated to a special card for mechanical tabulation and analysis. The following table of causes of blindness, repeated from year to year, will form an extremely useful index to the prevalence of the several underlying conditions resulting in loss of sight:—

CAUSES OF BLINDNESS.

	Column A. Cases certified blind during 1932.	Column B. Cases certified blind from August, 1929, to the end of 1931.
<i>Congenital and Undetermined—</i>		
1. Congenital and developmental effects, ...	33	108
2. Tumour of globe and orbit, ...	1	3
3. Myopia, ...	52	249
4. Other errors of refraction, ...	Nil.	Nil.
5. Glaucoma, primary, ...	26	120
6. Cataract, primary, ...	63	220
7. Other primary ocular defects (primary detachment), ...	1	14
<i>Infectious and Toxic—</i>		
(a) { 9. Ophthalmia neonatorum, ...	19	46
10. Trachoma, ...	3	14
11. Local septic infection of coats of eye, ...	3	40
12. Other local specific infections (gonorrhœa) (mycosis), ...	1	Nil.

	Column A. Cases certified blind during 1932.	Column B. Cases certified blind from August, 1929, to the end of 1931.
(b) { 15. Gonorrhœa, ...	Nil.	2
16. Syphilis, congenital, ...	26	52
17. Syphilis, acquired, including not definitely congenital, ...	29	107
18. Specific fevers (smallpox) (measles) (scarlet) (diphtheria), ...	9	24
23. Meningitis (non-tuberculous), including cerebro-spinal fever, ...	7	23
24. Tuberculosis, ...	1	17
25. Phlyctenular, strumous and similar, not definitely tuberculous, ...	14	37
26. Septicæmia, acute, ...	4	7
27. Septicæmia, chronic ; autotoxic, focal sepsis,	33	165
28. Other general infections and organismal diseases, ...	9	22
(a) = Exogenous.	(b) = Endogenous.	

Traumatic and Chemical—

31. Birth trauma, ... Nil.	1
32. Non-industrial trauma, ... 2	32
33. Industrial trauma, ... 12	66
34. War trauma, ... 2	1
35. Trauma, category not ascertainable, ... Nil.	2
37. Chemico-toxic, non-industrial (tobacco) (alcohol) (lead), ... 1	4
41. Scheduled industrial diseases (lead) (pyroxylin) (carbon bi-sulphide) (aniline) (phosphorus) (glass-blowers' cataract) (metal workers' cataract) (miners' nystagmus), ... —	Nil.
Sympathetic Ophthalmia, ... 11	*

Systemic Diseases—

50. Anæmia and blood diseases, ... Nil.	Nil.
51. Diabetes, ... 9	8
52. Nephritis, ... Nil.	3
53. Pregnancy, ... Nil.	5
54. Vascular diseases, including cerebral vascular lesions, ... 14	41
55. Intracranial neoplasm, ... 4	18
56. Other diseases of central nervous system, ... 4	8
57. Functional disturbances (hysteria) (malin-gering), ... Nil.	Nil.
60. Other general diseases, ... 3	1

Not Ascertainable Definitely, ... 4 Nil.

Total, ... 400 1,460

* Cases of sympathetic ophthalmia, which numbered 36, were included in the various forms of trauma.

Re-examinations.—During 1932, 24·2 per cent. of all cases examined for the first time were recommended to be re-examined by the surgeons. It was found that, in a number of cases, no useful purpose would be served by re-examination unless certain forms of treatment advised by the examiners had been carried

out, e.g., a cataract case certified blind, but requested to reappear in a year's time in order to ascertain the results of operation. Through the agency of the home teachers of the Mission to the Outdoor Blind, the necessary information relative to these and other similar cases was collected. In 1932, 145 cases were re-examined, compared with 75 in 1930 and 147 in 1931. The alteration in the decision of the clinic as the result of re-examination was as follows:—

(a) Certified blind on first examination and decision unaltered on re-examination, ...	38
(b) Certified blind on first examination and decision reversed on re-examination, ...	6
(c) Certified not blind on first examination and decision unaltered on re-examination, ...	51
(d) Certified not blind on first examination and decision reversed on re-examination, ...	18
(e) Certified blind on second examination and decision unaltered on re-examination, ...	3
(f) Certified blind on second examination and decision reversed on re-examination, ...	1
(g) Certified not blind on second examination and decision unaltered on re-examination, ...	19
(h) Certified not blind on second examination and decision reversed on re-examination, ...	4
(i) Others, ...	5
Total, ...	<u>145</u>

Treatment.—No treatment is carried out at the certifying clinic, but with respect to each case, whether certified blind or not, information is sent to the Mission to the Outdoor Blind as to the cause of blindness and the treatment advised. Thereafter the home teachers of the Mission visit the patients to ensure that treatment is obtained, and, if necessary, afford financial help for that purpose. This work, together with the visiting of the home teachers to ascertain if operations, &c., have been carried out, with a view to determining whether re-examination is indicated, may prove to be of great value in the prevention or postponement of blindness. As regards cases in which routine serological tests for syphilis have been reported positive, special arrangements are made for treatment by the medical officer in administrative charge of the clinic.

Serological Tests for Syphilis.—Of the cases examined at the clinic, specimens of blood were submitted to the Kahn test in 554 instances, and of these, 51, or 9·2 per cent., were reported positive. In 1929 the percentage of specimens giving positive results was 12·5; in 1930, 11·5; and in 1931, 9·1. It should be mentioned that all specimens of serum showing a positive Kahn test are also submitted to the Wassermann Reaction for confirmation.

SECTION II.

VITAL STATISTICS.

The vital statistics are given in detail in respect of municipal wards, causes, sex, age, &c., in the Appendix Tables on pages 253 to 286, but a summary is here introduced of the principal numbers and rates for convenient comparison with those of the preceding years.

SUMMARY.

	1930.	1931.	1932.
Population, ...	1,088,810	1,088,461	1,095,263
Acreage, ...	29,511	29,511	30,046
Persons per acre, ...	37	37	36
Number of Inhabited Houses, ...	259,401	261,179	263,321
Deaths—Number registered, ...	16,604	16,647	17,269
„ After correction for Transfers, ...	15,455	15,505	16,071
Births—Number registered, ...	23,888	23,575	23,943
„ After correction, ...	23,322	22,926	22,732
Death-rate per 1,000 living—			
All causes, ...	14.19	14.24	14.68
Birth-rate per 1,000 living, ...	21.42	21.06	20.76
Deaths under One Year—After correction, ...	2,355	2,397	2,542
„ „ „ Per 1,000 births, ...	101	105	112

BIRTHS.

The number of births registered, corrected for outward transfers and including those transferred inward, was 22,732 in 1932, compared with 22,926 and 23,322 in 1931 and 1930 respectively—again showing a decrease as compared with the preceding year. The birth-rate is, therefore, 20.76, the lowest ever recorded for the city. This is the sixth successive year in which the birth-rate has been below 22 per thousand of the population, and, with the death-rate remaining uniform between 14 and 15 per thousand, the natural increase of the population has become stabilised at about 7 per thousand, or approximately seven thousand per annum. Taking into account the factors of emigration, and more especially of migration beyond the city boundary, it is unlikely that, for the time being at least, the population of the city will materially increase.

Wards which show an excess of deaths over births are as follows :—

WARD.	Death Rate per Million.	Birth Rate per Million.	Excess of Death-rate over Birth-rate.
Park, ...	15,779	8,892	6,887
Kelvinside, ...	12,376	7,023	5,353
Langside, ...	13,316	8,532	4,784
Pollokshields, ...	12,981	8,701	4,280
Camphill, ...	13,328	10,517	2,811

The highest ward birth-rates were 29·3 in Mile-end, 29·0 in Cowcaddens, 28·0 in Dalmarnock, and 27·2 in Hutchesontown; the lowest rate was 7·0 in Kelvinside, followed by 8·5 in Langside and 8·7 in Pollokshields. These and other municipal rates are given in Appendix Table V, which contains also the rates for the preceding year.

The following information from the Registrar-General's returns shows the birth-rates for Glasgow and Scotland since 1871 :—

Glasgow.	Scotland.	Glasgow.	Scotland.
1871-1880, ...	36·6 34·9	1924, ...	24·1 21·9
1881-1890, ...	36·5 32·4	1925, ...	24·6 21·3
1891-1900, ...	33·7 30·3	1926, ...	23·5 20·9
1901-1910, ...	31·2 28·4	1927, ...	22·4 19·8
1911-1920, ...	25·7 24·2	1928, ...	22·3 19·8
1921, ...	28·7 25·2	1929, ...	21·2 19·0
1922, ...	27·3 23·5	1930, ...	21·6 19·3
1923, ...	25·6 22·8	1931, ...	20·9 19·0
		1932, ...	20·6 18·6

On the basis of local returns, the following comparison is made of the rates for several years in Glasgow and other towns :—

	1930.	1931.	1932.
Glasgow, ...	21·4	21·1	20·8
Edinburgh, ...	16·7	16·2	15·6
Dundee, ...	21·1	19·5	18·5
Aberdeen, ...	19·7	19·2	18·7
London, ...	15·8	15·0	14·3
Liverpool, ...	22·1	21·7	21·0
Manchester, ...	16·6	16·0	15·4
Birmingham, ...	17·7	16·9	16·3

ILLEGITIMATE BIRTHS.

During the year there were 1,330 births registered as illegitimate, compared with 1,422 during the preceding year. Those are equal to 5·9 per cent. and 6·2 per cent. respectively of the total births. As is shown in Appendix Table V, most of the wards are around the average for the city, with the exception of Exchange with 15·7, Park with 14·5, and Blythswood with 10·0, in each of which are situated various institutions which admit and keep under supervision unmarried mothers.

A more accurate comparison of the legitimate and illegitimate birth-rates is obtained when the calculation is based on the number of females of child-bearing ages; the former on married women of 15 to 44 years of age, and the latter on the unmarried women and widows of the same ages. This is given in the following table:—

GLASGOW.—BIRTH-RATES, DISTINGUISHING LEGITIMATE AND ILLEGITIMATE IN CERTAIN YEARS FROM 1871.

(Based on figures of Registrar-General).

Year.	Number of Legitimate Births.	Rate per 1,000	Number of Illegitimate Births.	Rate per 1,000
		Married Women 15-44 years.		Unmarried Women and Widows 15-44 years.
1871, ...	17,118	298	1,749	27
1881, ...	17,605	293	1,501	22
1891, ...	18,304	283	1,553	21
1901, ...	22,676	260	1,530	14
1911, ...	19,966	229	1,603	14
1921, ...	27,790	238	1,922	13
1931, ...	21,504	176	1,427	10
1932, ...	21,401	175	1,331	9

MARRIAGES.

There were 9,203 marriages in 1932, compared with 9,263 in 1931. These numbers represent rates of 8·3 and 8·4 per thousand of the population respectively. This reduction is comparatively small considering the prolonged industrial depression. The marriage rates of recent years are approximately ten per cent. less than the rates of pre-war days. The following table shows the marriages per thousand of the population since 1871:—

GLASGOW.—MARRIAGES PER 1,000 PERSONS LIVING.

1871-1880, ...	9·1	1911-1920, ...	9·7
1881-1890, ...	9·3	1921-1925, ...	9·3
1891-1900, ...	9·4	1926-1930, ...	8·5
1901-1910, ...	8·8	1931, ...	8·4
		1932, ...	8·3

DEATHS.

The total number of deaths registered during the year was 17,269, which becomes 16,071 after adjustment for outward and inward transfers. The death-rate is, therefore, 14·7 per thousand of the population compared with 14·2, the rate which obtained during the two preceding years. The death-rate has remained remarkably uniform during the past ten years, the highest being 16·3 recorded in 1929, when there was a serious outbreak of influenzal pneumonia. During 1932 both pneumonia and influenza were prevalent in the first and last quarters of the year respectively, factors which also caused an increase in infant mortality.

Quarterly Death-rate.—The following table of quarterly death-rates shows the variation in these seasonal rates, the reasons being as stated in the table:—

	1930.	1931.	1932.
1st Quarter,	18·4 { Measles prevalent.	19·4 { Pneumonia and Whooping Cough prevalent.	17·3 { Scarlet Fever and Pneumonia and Measles prevalent.
2nd „	15·1	15·0	13·9 { Scarlet Fever prevalent.
3rd „	12·0	11·8	11·0
4th „	15·3 { Scarlet Fever and Pneumonia prevalent. December Fogs.	14·7 { Scarlet Fever and Measles prevalent.	16·5 { Scarlet Fever Influenzal Pneumonia and Whooping- cough prevalent.

Ward Death-rates.—There is considerable disparity in the municipal ward death-rates, as will be found on reference to Table VI in the Appendix. The highest rate was 18·2 in Calton, Mile-end, and Exchange Wards, followed by 17·9 in Blythswood, 17·2 in Cowcaddens, and 17·1 in Sandyford, while the lowest rates were 10·6 in Whiteinch, 11·0 in Cathcart, and 11·5 in Govanhill.

According to the Registrar-General's returns, the rates for Glasgow since 1881 have been as follows:—

GLASGOW.—ALL CAUSES.—DEATH-RATE PER 1,000 LIVING.

1881-1890, ...	24·22	1925, ...	14·83
1891-1900, ...	21·53	1926, ...	15·09
1901-1910, ...	19·56	1927, ...	14·63
1911-1920, ...	16·36	1928, ...	14·80
1921, ...	15·10	1929, ...	16·53
1922, ...	17·20	1930, ...	14·31
1923, ...	14·28	1931, ...	14·13
1924, ...	16·10	1932, ...	14·55

The following is a comparison of death-rates based on local returns of several large towns in Scotland and England:—

GLASGOW AND SEVERAL TOWNS.—DEATH-RATE PER 1,000 LIVING.

	1929.	1930.	1931.	1932.
Glasgow, ...	16·3	14·2	14·2	14·7
Edinburgh, ...	14·8	13·8	12·9	13·5
Dundee, ...	16·0	16·0	13·9	13·8
Aberdeen, ...	14·5	12·4	13·9	13·4
London, ...	14·2	11·6	12·4	12·3
Liverpool, ...	15·5	13·2	14·3	13·2
Manchester, ...	15·3	12·7	13·9	13·0
Birmingham, ...	13·5	10·8	11·7	11·3

Transfer Deaths.—The deaths on which the above rates for Glasgow are calculated include those of persons formerly resident in Glasgow, but dying in institutions or elsewhere outwith the City. On the other hand, those dying within, but with home addresses outside, are excluded. The “inward transfers” numbered 573 during 1932, compared with 574 and 564 for the two preceding years, while the “outward transfers” numbered 1,771, compared with 1,716 and 1,713. The causes of deaths in both these groups are given in Appendix Table No. VII.

CAUSES OF DEATH.

The principal causes of death are summarised in the following table:—

SUMMARY OF DEATH-RATES PER MILLION FROM PRINCIPAL CAUSES.

	1930.	1931.	1932.
General Diseases—			
(a) Infectious, ...	1,009	1,412	977
(b) Tuberculous—			
(1) Phthisis, ...	805	865	890
(2) Others, ...	337	318	269
(c) Malignant (cancer, &c.), ...	1,320	1,393	1,367
Diseases of the nervous system, ...	1,436	1,390	1,328
Diseases of the circulatory system, ...	2,405	2,517	2,681
Diseases of respiration, ...	2,411	2,025	2,495
Congenital defects and malformations (including premature birth), ...	739	840	762
Violence, ...	663	600	554
All other causes, ...	3,069	2,885	3,357
All causes, ...	14,194	14,245	14,680

The mortality from infectious diseases shows a definite reduction. The rate for 1932 was 977 per million of the population, compared with 1,412 and 1,009 respectively in 1931 and 1930. This lower rate is largely due to a reduced mortality from measles (171 per million compared with 382) and from whooping-cough (117 compared with 426). The scarlet fever death-rate was higher (93 per million compared with 68), while the mortality from influenza, because of the December epidemic, increased from 190 in 1931 to 415 in 1932.

The mortality from pulmonary tuberculosis was slightly higher at 890 per million, compared with 865, possibly due to the adverse conditions which influenced respiratory diseases in general, the increase in cases notified being small. Mortality

from non-pulmonary forms of the disease, however, shows a marked decrease, the rate in 1932 being 269 per million, compared with 318 for the previous year and 337 in 1930. In this group the death-rate for tuberculous meningitis was 134, abdominal tuberculosis 46, and other forms of the disease 89, compared with the respective figures of 153, 55, and 110 in 1931. The marked drop in the mortality from tuberculous meningitis from 182 in 1930 is noteworthy. It is probably due to a variety of improved environmental conditions, such as reduced overcrowding, and the isolation in hospital of infectious cases of phthisis. The continued fall in the rate for abdominal tuberculosis may be attributed to lessened opportunity for bovine infection in children. The reduction in both of these causes is, however, favourably influenced by the lower birth-rates of recent years.

For the fourth year in succession a reduction in the mortality from nervous disease is recorded, although cerebral hæmorrhage, included in this group, has been the cause of more deaths, the rate being 937, compared with 929 in the preceding year. Deaths from circulatory diseases, now the heaviest individual group, are again more numerous, and the rate this year is 2,681 against 2,517 in 1931. Most deaths in this group are due to cardiac conditions, the rate for diseases of the heart being 2,154. Arterio-sclerosis, with a rate of 416, continues to increase. These causes will, of course, tend to become more prominent in proportion as the population generally survives to the later ages of life.

Diseases of the respiratory system will be dealt with later in Section V. The death-rate per million of the population is 2,495 against 2,025 in the preceding year. Influenza was also more prevalent, the death-rate being 415, compared with 190 and 147 respectively in 1931 and 1930.

The deaths from congenital defects and malformations, &c., were less numerous, the male deaths being only slightly lower than in the preceding year, 491 against 502, while females were considerably lower with a rate of 343 against 412. These differences are not accounted for by the relative proportion of male and female births, which numbered 11,662 males and 11,070 females in 1932, compared with 11,678 males and 11,253 females in 1931. Calculated on the number of births, the rate for these causes is equivalent to 37 per thousand in 1932 against 40 in 1931. Deaths from violence are dealt with later.

Particulars of the causes of death, with a comparison of the rates for the preceding years, will be found in Appendix Table VIII.

Age and Sex Distribution of Deaths.—The age and sex distribution of each cause of death is given in Appendix Table IX. In the enterica group of diseases there are nine deaths, seven of which were females between 20 and 45 years of age, whereas female cases of the disease formed only sixty per cent. of the total number. In pre-war days males always exceeded females. With regard to the common infectious diseases the sex distribution is about equal, and the incidence generally greatest at the youngest ages.

Influenza was more fatal to females with 245 deaths to 209 males, mostly occurring at ages over 45 years. The excessive female deaths from bronchitis, 312 against 287, occur at older ages, because of the greater number of elderly women in the population. Pneumonia is twice as fatal to males, the cases occurring at the younger and older ages.

Deaths from pulmonary tuberculosis numbered 974, of which 533 were males and 441 females, deaths of females at ages from 15 to 25 years being double those of males of similar age, whereas at ages over 35 years male deaths were twice as numerous as female. Deaths from tuberculous meningitis among males were thirty per cent. in excess of females, while other forms of the disease were equally fatal to both sexes.

Deaths from syphilis among males numbered 33 and females 11, while the respective figures for general paralysis of the insane were 44 and 15, a similar proportion.

Diabetes as usual was doubly fatal in the male sex, while deaths from nervous and heart diseases, as well as arterio-sclerosis, were more numerous among women, these differences being due, to a certain extent, to the excessive female population at the higher ages.

The rate per million for malignant disease was a little lower this year at 1,367, compared with 1,393 for 1931, which was the highest hitherto recorded in the city. This year the detailed information with regard to cancer is given in a somewhat different form in accordance with the altered classification of deaths which recently came into operation.

GLASGOW, 1932.—DEATHS FROM CANCER IN THE DIFFERENT SITES AS GIVEN IN THE INTERNATIONAL LIST OF CAUSES OF DEATH, 1931.

SITE OF LESION.	MALES.										FEMALES.										BORN SEXES.		Year 1931.	
	-15 -25 -35 -45 -55 -65 -75 75+ Total.										-15 -25 -35 -45 -55 -65 -75 75+ Total.										All Ages.		Both	
	-15	-25	-35	-45	-55	-65	-75	75+	Total.	-15	-25	-35	-45	-55	-65	-75	75+	Total.	Males.	Females.	Sexes.	Males.	Females.	Sexes.
Buccal Cavity and Pharynx, ...	...	1	—	—	1	11	24	26	9	72	—	—	1	—	3	2	—	1	7	79	89	11	100	
Digestive Organs and Peritoneum—																								
(a) Oesophagus, ...	...	—	—	—	2	10	10	17	5	44	—	—	—	4	5	6	7	3	25	69	32	13	45	
(b) Stomach and Duodenum, ...	...	—	1	3	10	32	59	50	19	174	—	—	2	6	24	55	53	20	160	334	180	159	339	
(c) Rectum, ...	...	—	—	3	2	7	20	23	7	62	—	1	1	2	8	7	7	6	32	94	66	31	97	
(d) Liver and Biliary Passages, ...	...	—	—	—	1	11	14	19	5	50	—	1	—	—	5	19	25	11	61	111	52	59	111	
(e) Pancreas, ...	...	—	1	—	—	4	5	5	5	20	—	—	—	1	—	7	3	5	16	36	12	13	25	
(f) Peritoneum, ...	...	—	1	—	—	—	—	—	—	1	—	—	—	—	3	—	1	4	5	2	2	4	4	
(g) Other Digestive Organs, ...	...	—	2	1	7	13	36	32	17	108	—	—	1	7	19	30	50	30	137	245	128	138	266	
Respiratory Organs, ...	...	—	2	3	6	13	22	20	3	69	—	—	—	1	10	9	3	2	25	94	52	29	81	
Uterus, ...	...	—	—	—	—	—	—	—	—	—	—	—	4	17	24	33	11	6	95	95	—	108	108	
Other Female Genital Organs, ...	...	—	—	—	—	—	—	—	—	—	—	—	2	3	7	7	6	2	27	27	—	35	35	
Breast, ...	...	—	—	—	—	—	—	—	—	—	—	—	2	9	29	42	24	17	123	123	—	112	112	
Male Genito-Urinary Organs, ...	...	2	2	—	2	8	17	19	7	57	—	—	—	—	—	—	—	—	—	57	70	—	70	
Skin, ...	...	—	—	1	1	—	2	1	1	6	—	—	—	—	2	3	4	—	9	15	8	4	12	
Other or Unspecified Organs, ...	...	1	2	—	—	8	18	14	4	47	1	1	2	6	6	23	18	8	65	112	57	54	111	
Totals, ...	...	4	11	11	32	117	227	226	82	710	1	3	15	56	142	246	211	112	786	1,496	748	768	1,516	

The figures indicate a reduction in the male deaths, 710 against 748 a year ago, and an increase in the female deaths from 768 to 786. Cancer of the buccal cavity and pharynx in 1932 was the cause of 79 deaths, compared with 100 in the preceding year. Of these, seven were females, while 72 were males. Of the total deaths, ten had no occupation or were retired, and probably most of them were in the age-group 75 years and over. The greatest number were metal workers, 14, or 19.4 per cent. of the total, a proportion which is little different from the percentage of metal workers in the male population generally, namely, 18.5. The number of bakers, &c., was 4, seamen and other transport workers 4, and general labourers 5, while lower numbers were recorded for other occupations and were of little significance.

In the new classification the analysis of deaths from cancer of the digestive organs, &c., is of considerable interest. Diseases of the œsophagus numbered 69, compared with 45, the males numbering 44, compared with 32 in the previous year, while the females were nearly twice as many, 25 against 13. Cancer of the stomach and duodenum was slightly more prevalent among males, while cancer of the rectum, as in former years, was doubly prevalent among males. Cancer of the respiratory organs was responsible for 69 male and 25 female deaths, the excess occurring at ages 55-75 (42 males and 12 females). The high cancer mortality in women is entirely due to disease of breast, uterus, and other female genital organs, which this year totalled 245, as compared with 255 in the preceding year.

Peptic ulcers were much more common as a cause of death among males (82 males, as compared with 30 females), most of them occurring after 30 years of age, while diarrhœa under two years of age as a cause of death is also considerably more fatal to male infants. Appendicitis in 1932 was responsible for 105 deaths, compared with 107 during the preceding year. Deaths from cirrhosis of the liver increased among males from 21 in 1931 to 35 in 1932, while the respective figures for females were 14 and 15. There were 403 deaths from kidney disease.

Puerperal diseases and congenital debility, premature births, &c., are dealt with in the next section of the Report.

There has been a considerable reduction in the past three years in deaths among males from violence, the total being 513 in 1930 and in 1932, 394, while the respective figures for females were 209 and 213. The following table is again repeated to show the number of deaths in certain age groups:—

GLASGOW.—DEATHS FROM “SUICIDE AND OTHER VIOLENCE.”

Year.	MALES.					FEMALES.					Both Sexes.
	-5 years.	-15 years.	-45 years.	+45 years.	Total.	-5 years.	-15 years.	-45 years.	+45 years.	Total.	
1927,	62	52	155	225	494	42	23	44	108	217	711
1928,	52	44	126	204	426	44	26	62	105	237	663
1929,	48	55	153	210	466	38	22	38	109	207	673
1930,	45	66	165	237	513	33	22	49	105	209	722
1931,	37	59	133	205	434	28	24	47	120	219	653
1932,	41	63	109	181	394	41	20	43	109	213	607

Deaths in Hospitals, Nursing Homes, and other Institutions.

—Details of the deaths in Glasgow institutions are given in Appendix Table X, which shows that almost half (49·7 per cent.) of the total deaths registered occurred in such institutions. The proportion for the previous year was 50·8 per cent. Of the total 7,992 deaths, 3,310 occurred in local authority general hospitals and poorhouses, 1,753 in fever hospitals and sanatoria, and 254 in mental hospitals; altogether more than two-thirds of the total deaths in institutions. In voluntary hospitals and infirmaries 2,448 deaths occurred, and 227 in nursing homes. The largest number of deaths occurred from pneumonia, 1,140; followed by heart disease, 990; cancer, &c., 636; and 578 from pulmonary tuberculosis.

Uncertified Deaths.—Uncertified deaths during 1932 numbered 12, compared with 14 during 1931.

SECTION III.

MATERNITY AND CHILD WELFARE.

INFANT MORTALITY.

The infant mortality rate (112 per thousand births) was higher than that for the preceding year (105). An analysis of the various causes of deaths in infants under one year shows that this increase is primarily due to respiratory affections, although there was at the same time some increase in the deaths from various digestive conditions, two causes of death which are inter-related. The infant mortality rate from acute bronchitis and broncho-pneumonia was increased by the influenza epidemic which prevailed during the last few weeks of the year. Apart from this, the rate was not greater than that in an ordinary year. While digestive disturbances, chiefly diarrhœa, are commonly associated with acute respiratory affections, they are also related to the practice of infant feeding, especially where mothers, as often happens, are unable to breast-feed their infants for more than the first few months in life. It is reported by the Health Visitors that, at the time of their first visit to the clinics, an increasing number of mothers are endeavouring to feed their babies at the breast, but in many cases weaning is being resorted to when the child is only a few months old.

The number of deaths of infants under one year was 2,542, compared with 2,397 during the preceding year. In Appendix Table XII these deaths are given in each ward of the city, with the relative rates per thousand births, along with a comparison of the rates during the two preceding years. In the table showing the causes of infant mortality it will be observed that the death-rates due to diseases of the respiratory system were considerably increased in respect of both male and female children, these rates being the highest recorded for several years, and were sufficient to neutralise the reduction in the rates due to infectious diseases. The other causes of infant deaths, such as immaturity, disease of the nervous system, tuberculosis, &c., remain much the same. The increase in digestive diseases is almost entirely due to diarrhœa and enteritis, which are

definitely influenced by respiratory affections and their complications. It may be remarked that the respiratory diseases largely determine the gradations in the infant mortality rate of the city, and the experience of last year was an example of this fact.

Observations showed that there was a tendency for minor rickets to increase during the winter months in certain districts of the city. Careful watch was maintained, as a recrudescence of this affection would require serious attention. The most that can be said, however, is that the increase was noticeable, but was confined to minor manifestations.

The following tables show (1) the infant death-rates in Glasgow since 1891; (2) the rates in other large towns; and (3) the death-rates among legitimate and illegitimate children per 1,000 births in each group:—

GLASGOW.—INFANT DEATH-RATE DURING SEVERAL PERIODS.

			Per 1,000.				Per 1,000.
Average of 10 years,	1891-1900,	...	149	1926,	...	...	104
"	10 "	1901-1910,	135	1927,	...	...	107
"	5 "	1911-1915,	134	1928,	...	...	107
"	5 "	1916-1920,	115	1929,	...	...	107
"	5 "	1921-1925,	107	1930,	...	...	101
				1931,	...	...	105
				1932,	...	...	112

COMPARISON WITH SEVERAL LARGE TOWNS.

				1930.	1931.	1932.
GLASGOW,	...	...	...	101	105	112
Edinburgh,	...	...	...	82	69	73
Dundee,	...	...	...	113	92	72
Aberdeen,	...	...	...	80	90	93
London,	...	...	...	59	65	67
Liverpool,	...	...	...	82	93	91
Manchester,	...	...	...	79	84	85
Birmingham,	...	...	...	60	71	67

Illegitimate Mortality. — The mortality of illegitimate children compared with others is shown in the following table, since the beginning of the present century. It will be observed that the marked fall in the rate since then has not been continued, as a rise from 146 to 173 last year has taken place. This rate is an index of industrial conditions:—

GLASGOW.—DEATH-RATE PER 1,000 LEGITIMATE AND ILLEGITIMATE BIRTHS.

			Legitimate.	Illegitimate.				Legitimate.	Illegitimate.
1899-1900,	...	144	286		1926,	...	101	157	
1901-1910,	...	126	257		1927,	...	105	147	
1911-1915,	...	127	217		1928,	...	102	176	
1916-1920,	...	110	175		1929,	...	103	165	
1921-1925,	...	103	169		1930,	...	91	146	
					1931,	...	99	173	
					1932,	...	101	169	

Causes of Infant Mortality.—The causes of infant deaths according to sexes and for each month during the first year of life are given in Appendix Tables XIII and XIV. About 33 per cent. of the male deaths and 29 per cent. of the female deaths occurred in the first month of life. Nearly half of these early deaths are due to premature births.

As is shown in the summary of the totals of the principal groups of causes of infant death in Tables XIII and XIV, which is given below, with a comparison for previous years since 1916, the death-rate from causes in the immaturity group has shown little reduction, the rate varying in the case of males from 39 to 46 and of females from 29 to 37:—

CAUSES OF DEATH.	Rate per 1,000 Births.										
	1916-20	1921-25	1926	1927	1928	1929	1930	1931	1932		
MALES—											
I. Immaturity, ...	46	40	44	39	45	45	40	42	41		
II. Diseases of Respiratory System, ...	27	30	29	36	28	35	33	26	38		
III. Diseases of Digestive System, ...	18	15	15	17	17	14	14	17	21		
IV. Diseases of Nervous System, ...	8	7	8	6	7	6	5	5	4		
V. Tuberculous Diseases, ...	3	3	2	1	2	1	2	2	1		
VI. Infectious Diseases, ...	11	15	11	14	15	9	12	21	9		
VII. Suffocation, ...	—	—	—	1	—	—	—	—	—		
VIII. All other causes, ...	10	9	9	5	7	8	6	7	8		
All causes, ...	123	119	118	119	121	118	112	120	122		
FEMALES—											
I. Immaturity, ...	36	32	29	37	33	34	33	36	30		
II. Diseases of Respiratory System, ...	21	22	23	24	23	27	25	15	34		
III. Diseases of Digestive System, ...	14	10	13	10	11	10	10	11	16		
IV. Diseases of Nervous System, ...	6	5	4	4	4	5	3	3	4		
V. Tuberculous Diseases, ...	3	2	1	1	2	2	2	1	1		
VI. Infectious Diseases, ...	11	14	10	14	14	10	11	17	8		
VII. Suffocation, ...	—	1	1	—	1	—	—	—	—		
VIII. All other causes, ...	9	7	7	5	5	7	5	5	7		
All causes, ...	100	93	88	95	93	95	89	88	100		
Ratio—Males to 100 Females, ...	123	129	134	125	129	122	131	140	122		

The mortality rate for the immaturity group of diseases in 1932 at 41 was only slightly lower for males, while for females the rate was 30 per thousand births, compared with 36 in 1931. As previously stated, there is little difference between the number of male and female births. Among the former there were 76 deaths from congenital malformations, whereas there were 49 female deaths in this category. The respective numbers for premature births were 257 and 174.

The mortality per thousand births from infectious diseases is considerably lower for both sexes, the males falling from 21 in 1931 to 9 in 1932 and the females from 17 to 8. With the rate for all other cases remaining much the same as last year, the higher infant mortality for 1932 is explained by the considerable increase in the number of deaths from respiratory and digestive diseases. The rate for the latter in 1932 for males is 21, against 17 in the previous year and corresponding rates for females, 16 against 11.

There were 1,427 deaths of male infants and 1,115 deaths of female children during the year, compared with 1,400 and 997 respectively for the previous year. The infant mortality rate for males was 122 and for females 100, while the ratio of male deaths to 100 female deaths was 122. This latter ratio is the lowest recorded, whereas in the previous year the sex ratio was one of the highest.

Infant Mortality in Wards.—The infant mortality in Whitevale was 167 per thousand births, compared with 100 in the preceding year, and in Blythswood the corresponding figures were 163 and 119. In Mile-End the rate was 145, and in Calton 140, an area in which, until recent years, the infant mortality has remained refractory. Other high rates were 136 in Exchange, 135 in both Woodside and Sandyford, and 134 in Govan. The lowest rates were 24 in Kelvinside, 27 in Langside, 44 in Pollokshields, and 45 in Camphill, all residential areas of the city.

CHILD WELFARE SCHEME.

The development of the Scotstoun Rehousing Scheme and the growth of the districts of Knightswood and Whiteinch rendered advisable the provision of a local clinic for child welfare and the treatment of school children. For this purpose a portion of the former County offices in Dumbarton Road was converted at a moderate cost. This new clinic, known as the Blawarthill Clinic, was opened in April, and required no increase in staff.

A new booklet entitled "Hints on the Management of Children," was prepared by the Child Welfare staff and issued by the Committee on Health for distribution at the clinics and to the public generally at the price of one penny. It has proved most useful and has had a wide sale. During the three months ending December, 3,159 copies were sold. It contains detailed simple advice on ante-natal care, clothing, hygiene, common ailments, and feeding of mothers and children.

CO-ORDINATION OF THE CHILD WELFARE AND EDUCATION HEALTH SERVICES OF THE CORPORATION.

The co-ordinating arrangements sketched in broad outline in last year's Report have worked smoothly and efficiently during the year covered by this Report. Greater facilities for specialised treatment—medical and surgical—have been obtained, and the new arrangements have been highly appreciated by the parents. The following brief notes have been provided to show the co-operation of the services:—

Tonsils and Adenoids Operations.—Since the transference of the operations for removal of tonsils and adenoids to the Western District Hospital, the work has been carried on with ease in administration and with many advantages to the children. The actual operations are carried out by the specialists of the Education Health Service, with all the facilities and resources of hospital accommodation and trained medical and nursing personnel. The co-ordinating arrangements, in which each of the services plays its own special part, add greatly to the safety of the children by providing for examination before admission, careful preparation for operation, attention during residence, visitation in their homes after discharge, and arrangements for immediate readmission if necessary. The safeguards which were in operation prior to these co-ordinating arrangements coming into force, and which were designed to prevent unnecessary operation, are still rigidly observed. The children operated on must be definitely suffering in health because of enlarged tonsils and adenoids, and no child is nominated for operation on account of simple enlargement of the tonsils where the general health is not affected.

Orthopædic Clinic.—The co-ordinating arrangements made between this clinic and the other services have worked well during the year. The close connection established with Mearns-kirk Hospital has provided early treatment for many children who would otherwise have remained on hospital waiting-lists for long periods. All cases referred from the clinic to Mearns-kirk Hospital for operative treatment return to the clinic for post-operative supervision. Since this supervision is carried out by the surgeon who operated on the child, many advantages in continued treatment accrue to the child, and a considerable saving in duration of residence in hospital, with a consequent quicker turnover in hospital cases, is effected. Post-operative supervision is of special importance in orthopædic cases, so that the best end

results may be obtained. Minor alterations to splints and adjustments to apparatus are effected by the technical specialist staff of the hospital, and the provision of suitable apparatus and special splints is supervised.

The other methods of treatment of orthopædic cases, such as muscle re-education, correcting exercises, massage, radiant heat, electrical treatment, &c., are carried out as part of the general work of the clinic.

All the arrangements for admission to the hospital for operation and other forms of treatment are made directly through the clinic, thereby saving time and expediting the work.

Other Operations.—The arrangements made with one of the Corporation hospitals to meet the needs of children requiring other forms of operative treatment have met a long-felt want. One great advantage of these arrangements has been that cases of long-standing mastoid infection due to middle ear disease have received prompt and efficient treatment. Most of the cases operated on have shown excellent results which could not have been obtained by any other form of treatment. The cases requiring operation are carefully selected, after observation, by the specialists.

Ultra-Violet Ray Therapy.—The services of the three clinics—one large school clinic and two smaller child welfare clinics—have been made available for use in common whenever suitable and convenient arrangements could be made to meet the needs of the children. School children resident in the Govan area have been treated during the year at the Govan Town Hall Child Welfare Clinic. This arrangement has resulted in saving in time and transport expenses. In the other areas of the city the need for the use of these clinics in common does not appear to exist to the same extent. These clinics appear to be able to overtake their own cases at present, but the services are available when and if required.

Blind Children.—During the year practically all the children attending the classes for the blind have been examined by the Board of Ophthalmic Surgeons of the Joint-Clinic. For the purpose of making this survey of the blind school children, one of the ophthalmic surgeons of the Education Health Service staff was added to the Examining Board. The children have been classified into those definitely blind within the meaning of the

Blind Persons Act, 1920, those likely to become blind within a period of five years from the date of examination, and those likely to become blind before reaching the age of sixteen years. In future no child will be admitted to the classes for the blind unless certified by the Board of Examiners. Any child capable of benefiting by sighted instruction will be kept under supervision in the "Sight-saving Classes." If the child's condition remains satisfactory he will remain in the sighted classes, but, if for any reason he is likely to come within the definition of a blind person, transfer to the classes for the blind will take place.

Following this policy, any child attending the "Sight-saving Classes" who is likely to become blind, because of rapid deterioration of eyesight or other cogent reason, will be transferred to the Joint-Clinic for detailed examination and classification.

Mentally Defective Children.—The survey of the uneducable mentally defective children has been continued during the year, but has not yet been completed. The children will be classified respecting suitability (1) for home supervision, (2) guardianship, and (3) institutional care.

Infectious Disease.—The transmission of information from the Health Department to the schools and attendance officers, and *vice versa*, respecting individual cases of infectious disease has been rendered more expeditious and accurate by the co-ordinating arrangements now operating. In addition to the formal transmission of notices to schools in individual cases, constant touch is maintained between the Health Department and the Education Health Service respecting the prevalence of infectious disease in particular schools. Consultations between the Deputy Medical Officer of Health and the Divisional Medical Officers provide for full co-operation in dealing with infectious disease among school children.

Dispensaries.—The local dispensaries of the Health Department dispense special prescriptions issued by the Education Health Service to school children. Prior to the coming into operation of new arrangements all prescriptions were dispensed at a central dispensary. This method often involved travelling long distances to obtain the special medicine. The new arrangements provide convenient centres in different parts of the city, thereby preventing unnecessary travelling. These facilities and the convenience of the new arrangements have been much appreciated by the parents of the children.

The Central Register.—Investigation is made by the Public Assistance Department into the circumstances of all children receiving treatment at the school clinics to ascertain whether they come within the scale of necessity. The arrangements now operating, after surmounting the initial difficulties of investigating very large numbers, are working with smoothness and efficiency.

NOTIFICATION OF BIRTHS.

The number of notifications of births received during 1932 is shown in Appendix Table XV, compared with the corresponding figures for the two preceding years. As notifications include still-births, the notifications are always in excess of the number of births registered. Omissions to notify births in terms of the Act average around $2\frac{1}{2}$ per cent., but most of these are formally intimated after attention has been directed to the omission.

Nature of Attendance at Births.—The proportion of births medically attended fell from 48·6 per cent. in 1914 to 40·1 in 1925. In 1932 the proportion was 47·2.

Still-Births.—The number of still-births known to occur in Glasgow usually averages about 4 per cent. of the total births. During 1932 there were 985 still-births, equal to a rate of 4·2. Of the medically-attended births there were 193 still-births among home cases, representing a rate of 3·5, and 452 in institutions, equal to a rate of 8·0. Together the rate indicated is 5·7. Among non-medically attended births there were 340, which is equivalent to a rate of 2·7.

WORK OF THE MATERNITY AND CHILD WELFARE CENTRES.

During the year a number of rearrangements were made in the Maternity and Child Welfare Clinics to meet variations in the numbers attending. At the new clinic at Blawarthill there are now three weekly diets, one for ante-natal cases, one for infants, and the third for pre-school children. This enabled certain adjustments to be made in the Partick district. An

additional consultation is now held at Adelphi Street, in place of that formerly held in Pollokshaws Burgh Hall. The revised list of clinics is given below:—

LIST OF MATERNITY AND CHILD WELFARE CLINICS.

	9 a.m.	1.30 p.m.
MONDAY,	Church Hall, Garngad Hill. 106 Orr Street (1-5 years). Wellshot Road, Shettleston. 130 Adelphi Street, S. (—1 year). 2 Summerton Road, Govan (Ante-natal). Elder Park (Ante-natal). Richard Street (Ante-natal).	Richard Street (—1 year). 20 Cochrane St. (Ultra-Violet Ray). 1 Burgh Hall Street, Partick (Ante-natal). 60 Avenuepark Street. 106 Orr Street (—1 year and +1 year). Wellshot Rd., Shettleston (Ante-natal) 130 Adelphi Street, S. (—1 year). 132 Weir Street. 2 Summerton Road, Govan (Ultra-Violet Ray). 614 Dobbie's Loan (Ante-natal).
TUESDAY,	Richard Street (1-5 years). Church Hall, Garngad Hill. Fernbank Street, Springburn. 60 Avenuepark Street. Wellshot Road, Shettleston. Adelphi Street. 2 Summerton Road, Govan. 106 Orr Street (Ante-natal).	Richard Street (Ante-natal). 614 Dobbie's Loan (Ante-natal). 106 Orr Street. Wellshot Road, Shettleston. Adelphi Street (Ante-natal). Elder Park Centre (Ante-natal). 194 Fernbank Street, Springburn. 1 Burgh Hall St., Partick (—1 year).
WEDNESDAY,	20 Cochrane St. (Ultra-Violet Ray). Richard Street (—1 year). 60 Avenuepark Street. 106 Orr Street (—1 year and +1 year). 130 Adelphi Street, S. (1-5 years). 132 Weir Street. 2 Summerton Road, Govan (Ultra-Violet Ray). Wellshot Road, Shettleston.	20 Cochrane Street. Fernbank St., Springburn (Ante-natal). 614 Dobbie's Loan (—1 year). 106 Orr Street (—1 year). 130 Adelphi Street, S. (Ante-natal). 2 Summerton Road, Govan. Blawarthill (Ante-natal).
THURSDAY,	614 Dobbie's Loan (1-5 years). 106 Orr Street (1-5 years). Wellshot Road, Shettleston. 130 Adelphi Street, S. (1-5 years). 132 Weir Street. Richard Street (—1 year). Fernbank Street, Springburn. (Ante-natal)	1 Burgh Hall St., Partick (1-5 years). 60 Avenuepark Street (Ante-natal). 614 Dobbie's Loan (—1 year). 106 Orr Street (—1 year). Wellshot Road, Shettleston (Ante-natal). 130 Adelphi Street, S. (—1 year). 132 Weir Street. 2 Summerton Road, Govan (Ante-natal).
FRIDAY,	Fernbank Street, Springburn. 614 Dobbie's Loan (1-5 years). 106 Orr Street (—1 year). Wellshot Road, Shettleston. 130 Adelphi Street, S. (1-5 years). 2 Summerton Road, Govan. 60 Avenuepark Street (Ante-natal). Blawarthill (—1 year).	20 Cochrane Street (Ultra-Violet Ray). 1 Burgh Hall Street, Partick (—1 year). 614 Dobbie's Loan (—1 year). 106 Orr Street (Ante-natal). 2 Summerton Road, Govan (Ultra-Vio Ray). Elder Park Centre (—1 year). Blawarthill (+1 year).

Maternity Hospital Ante- and Post-natal Clinics—Daily, Monday to Friday, at 1.30 p.m.
Saturday, 9.30 a.m. Vaccination is also done at 20 Cochrane Street on Tuesdays at 12.30 p.

The total number of attendances at the infant consultations during 1932 was 172,937, compared with 179,323 for the preceding year. This is the first year in which the clientele has not increased, a fact no doubt due to the diminishing birth-rate. This finds corroboration in the fact that the primary attendances are responsible for the whole of the decrease. Of the total attendances, 11,384 were new infants, while 161,553 subsequent attendances were recorded. There were 724 fewer primary attendances. As the consultations held during the year numbered 2,839, the average attendances at each was 61, compared with 62 for the preceding year. Each primary case made on the average 14 subsequent attendances. Primary attendances at all the centres were less in number than they were a year ago, with the exception of Cowcaddens, where there was a small increase, and at Richard Street, which has replaced the former inadequate accommodation at Port Street, and where there has been a considerable increase because of the larger number of consultations now held in Anderston district.

The following table gives the attendance at each consultation centre during the years 1931 and 1932:—

ATTENDANCES AT INFANT CONSULTATIONS, 1932.

	No. of Consultations held.	Children—1 year. No. of Attendances.		Children +1 year. No. of Attendances.		Total No. of Attendances.		1931—Total No. of Attendances.	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Adelphi Street,	302	1,257	11,081	192	9,886	1,449	20,967	1,509	20,461
Cowcaddens, ...	258	893	6,806	306	7,521	1,199	14,327	1,063	14,560
Olderpark, ...	201	549	5,370	212	5,918	761	11,288	899	11,438
Marngad Hill, ...	99	394	2,906	93	3,899	487	6,805	581	8,345
Govan, ...	156	502	4,311	102	3,961	604	8,272	672	8,449
Port Street, ...	406	1,670	18,416	260	11,288	1,930	29,704	1,980	28,287
Marjhill, ...	151	553	4,180	139	4,377	692	8,557	681	9,857
Partick, ...	181	452	3,540	93	4,231	545	7,771	937	12,845
Richard Street, ...	206	569	5,604	169	5,197	738	10,801	667	7,764
Whetteston, ...	307	808	8,780	169	8,219	977	16,999	1,135	20,491
Veir Street, ...	239	490	4,129	102	5,306	592	9,435	723	12,154
Cochrane Street, ...	52	160	1,089	68	1,259	228	2,348	294	2,603
Springburn, ...	156	638	5,250	119	4,006	757	9,256	829	8,428
Pollokshaws, ...	52	99	718	32	829	131	1,547	138	1,533
Blawarthill, ...	73	215	1,886	79	1,590	294	3,476	—	—
2,839		9,249	84,066	2,135	77,487	11,384	161,553	12,108	167,215
		93,315		79,622		172,937		179,323	

There is no centre at Pollokshaws—mothers from that district attend at Adelphi Street.

The illnesses, &c., recorded on first attendance at the consultations are here summarised:—

INFANT CONSULTATIONS.—ILLNESSES, &C., RECORDED.

	1931.		1932.	
	-1 Year.	+1 Year.	-1 Year.	+1 Year.
Debility and Malnutrition (including Underweight), ...	527	170	429	140
Birth Debility, ...	225	5	164	—
Prematurity, ...	74	1	103	—
Marasmus, ...	3	—	2	—
Diseases of Digestive System,	7	3	—	3
Diseases of Respiratory System,	3	2	1	2
Measles, ...	—	—	—	—
Whooping-cough, ...	—	—	—	—
Rickets, ...	19	99	6	55
Others, ...	2	—	—	—
TOTAL, ...	860	280	705	200

SUPPLY OF MILK AND MEALS TO NECESSITOUS MOTHERS AND CHILDREN.

During the year supplies of milk continued to be given to expectant and nursing mothers, and to children up to five years of age, under the following general conditions:—(1) Regular attendance at a Child Welfare Centre; (2) when the case was necessitous; and (3) when a supply of milk was certified by the Medical Officer of the Centre to be required on the grounds of health.

Except where conditions of health require a more frequent attendance, infants are not expected to attend more frequently than once a fortnight, and toddlers once in six weeks. While compliance with the above general conditions is usually required, exception is made where a mother or child, on first attendance at an infant consultation, presents conditions of health which suggest that an immediate grant of milk may be desirable or necessary. The following table summarises the applications and grants for the year 1932:—

	Applications Granted.			Total.
	Free.	At Reduced Price.	Applications Refused.	
Fresh Milk, ...	45,747	1,580	881	48,208
Dried Milk, ...	135	2	1	138
	45,882	1,582	882	48,346

These totals represent the number of individuals included in the applications. Grants are mainly for a period of six weeks at a time.

(a) *Fresh Milk*.—The following table further analyses the number of applications for fresh milk granted during the year:—

ORIGINAL APPLICATIONS.

Rate charged to Applicant.				Number of Families.	Number of Expectant and Nursing Mothers.	Number of Children under 5 years.
Half-Price,	...	...	...	117	61	57
Free,	...	...	...	3,615	2,052	1,630
				3,732	2,113	1,687

REPEAT APPLICATIONS.

Half-Price,	...	...	...	1,280	277	1,185
Free,	...	...	...	36,855	9,096	32,969
				38,135	9,373	34,154

TOTALS.

Half-Price,	...	...	...	1,397	338	1,242
Free,	...	...	...	40,470	11,148	34,599
				41,867	11,486	35,841

This table shows that 3,732 original applications were granted during the year for supplies of fresh milk, covering 2,113 expectant or nursing mothers, and 1,687 children under five years of age, or, together, 3,800 individuals. The repeat applications of these families and of those previously on the roll number 38,135, making a total of 41,867 applications granted. The total quantity of fresh milk ordered was 1,965,921 pints, and the cost £18,079:

Certificates for grants of fresh milk were given by the medical officers at the various Centres for the following reasons:—

SUMMARY OF MEDICAL CERTIFICATIONS ON APPLICATIONS
FOR FRESH MILK.

Diseases.	Mothers.		Children.		Total.
	Expectant.	Nursing.	—1 year.	—5 years.	
Debility, ...	1,187	359	75	130	1,751
Progressing, ...	—	—	340	357	697
Insufficiency of Breast Milk,	—	9,735	—	—	9,735
Child losing Weight, ...	—	—	96	324	420
Child under Weight, ...	—	—	9,712	20,922	30,634
Child's Weight stationary,	—	—	92	329	421
Malnutrition, ...	—	—	712	743	1,455
Marasmus, ...	—	—	5	1	6
<i>Debility after—</i>					
Infectious Diseases, ...	—	—	52	247	299
Other Diseases, ...	29	1	98	227	355
<i>Infectious Diseases—</i>					
Measles, ...	—	—	8	25	33
Whooping-cough, ...	—	—	23	56	79
Chickenpox, ...	—	—	5	13	18
<i>General Diseases—</i>					
Anæmia, ...	88	2	1	4	95
Rickets, ...	—	—	64	1,045	1,109
<i>Diseases of Respiratory System—</i>					
Bronchitis, ...	1	—	25	44	70
Pneumonia, ...	—	—	13	35	48
<i>Others—</i>					
Enteritis, ...	—	—	7	9	16
Albuminuria, ...	84	—	—	—	84
Influenza, ...	—	—	—	2	2
Totals, ...	1,389	10,097	11,328	24,513	47,327

(b) *Dried Milk.*—During the year supplies of dried milk were also given in suitable cases, the number of applications received being as follows:—

	Number of Families.	Number of Expectant and Nursing Mothers.	Number of Children under five years.	Number of Packets Ordered.
Original Applications, ...	48	—	49	84
Repeat ,, ...	946	—	972	1,475
Total, ...	994	—	1,021	1,559

While the same scale of “necessitousness” is applied to applications for dried milk as to applications for fresh milk, the conditions of grant are somewhat different, for, while grants of fresh milk are refused to families whose income is over the scale, supplies of dried milk may be given at the wholesale rate. The following summary shows the number of packets and the amount

recovered, as well as the loss falling upon the Corporation, for the supplies of dried milk issued under these conditions:—

Price per Packet.	Number of Packets Issued.	Cost to Corporation.	Amount Recovered.	Gain or Loss to Corporation.
Full Price,...	793	£53 15 8	£56 14 8	+£2 19 0
Part Price,...	10	14 6	7 8	— 6 10
Free, ...	756	54 11 10	—	—54 11 10
Total, ...	1,559	£109 2 0	£57 2 4	—£51 19 8

In all, 1,559 packages were distributed under the scheme, of which 793 were charged at full price, 10 at part price, while 756 were given free, the net cost to the Corporation being £51 19s. 8d.

SEWING, &c., CLASSES.

At the Child Welfare Centres where facilities are available sewing and other work classes and social meetings for mothers are organised by the staff throughout the winter months, and these have become very popular:—

Centre.	Nature of Class.	Period.	Day and Hours.	Average Attendance
Cowcaddens	... Sewing Class	... Sept. to Mar.	Mon., 7 p.m.	55
Do.	... Play Centre ...	... Sept. to Mar.	Wed., 6 p.m.	30
Do.	... Girls' Club ...	... Sept. to Mar.	Mon., 6 p.m.	12
Partick ...	... Sewing Class	... Oct. to Mar.	Wed., 7 p.m.	40
Richard Street	... Mothers' Club	... Sept. to Mar.	Thurs., 2 p.m.	60
Do.	... Play Centre ...	... Sept. to May	Mon. and Wed., 4.30 p.m.	20
Maryhill...	... Sewing Class	... Sept. to Mar.	Tues., 7 p.m.	37
Do.	... Play Centre ...	... Sept. to Mar.	Thurs., 7 p.m.	40
Do.	... Mothers' Club	... Sept. to Mar.	3rd Fri. each month, 7.30 p.m.	80
Springburn	... Play Centre ...	... Nov. to Mar.	Wed., 7.30 p.m.	30
Kingston	... Sewing Class	... Oct. to Mar.	Thurs., 7 p.m.	25
Shettleston	... Sewing Class	... Oct. to Mar.	Wed., 7 p.m.	80
Do.	... Cookery Class	... Oct. to Mar.	1st Wed. each month, 7 p.m.	80
Do.	... Thrift Club ...	... Oct. to June	Wed., 2 p.m.	40
Bridgeton	... Mothers' Club	... Oct. to Mar.	Wed., 7 p.m.	55
Do.	... Fathers' Council	... Oct. to Mar.	Alternate Mon., 7 p.m.	20
Arklet Road	... Mothers' Association	Oct. to Mar.	Wed., 7 p.m.	80
Do.	... Singing Class	... Oct. to Mar.	Thurs., 7 p.m.	30
Do.	... Men's Section	... Oct. to Mar.	Fri., 7 p.m.	60
Do.	... Home Nursing Class	Oct. to Dec.	Mon., 7 p.m.	30
Do.	... Children's Play Hour	Oct. to June	Wed. and Fri., 10 a.m.	30
Govan Town Hall	Sewing ...	... Oct. to Mar.	Thurs., 7 p.m.	40

Fathers' Councils.—The Fathers' Councils at Govan and Bridgeton Centres continued their activities during the winter, 1932-33. The sessional programmes consist of addresses by members of the staff and others, social evenings, and outings during the summer months.

ANTE-NATAL CONSULTATIONS.

Glasgow Royal Maternity Hospital.—The total number of cases attending the ante-natal dispensary for the first time was 5,017 during 1932, compared with 5,947 in 1931, while the total attendances during the respective years were 15,286 and 15,989. During 1932, 3,596 cases were treated to a termination in delivery, of which 1,508 were attended in their own homes.

The number admitted to the ante-natal wards during 1932 was 1,220, compared with 1,294 in 1931.

At the infant consultations held at the Maternity Hospital there were 5,943 attendances, as compared with 7,036 during the previous year. The first attendances numbered 675.

ANTE-NATAL DISPENSARY—

	1930.	1931.	1932.
Number attending for first time, ...	5,200	5,947	5,017
Total attendances, ...	12,201	15,989	15,286
Number treated to a termination, ...	3,447	4,037	3,596
Number sent to Hospital—			
(a) For confinement, ...	1,845	2,226	1,656
(b) „ miscarriage, ...	109	135	109
(c) „ ante-natal treatment, ...	508	612	554
(d) „ ante-natal treatment and confinement, ...	292	322	290
(e) For ante-natal treatment and miscarriage, ...	42	62	33
Number treated on District—			
(a) For confinement, ...	1,144	1,274	1,493
(b) „ miscarriage, ...	15	18	15

ANTE-NATAL WARDS—

Average number under treatment,	46	46	44
Number admitted, ...	1,385	1,294	1,220
Total days, ...	16,755	13,850	12,703
Condition on dismissal—			
(1) Recovered, ...	299	330	69
(2) Improved, ...	203	145	317
(3) Confinement completed, ...	795	771	732
(4) Died, ...	—	1	7
(5) No change, ...	74	52	94

INFANT CONSULTATION—

			1930.	1931.	1932.
First Attendances, ...	...	...	1,011	873	675
Subsequent Attendances, ...	...	...	6,376	6,163	5,268
Total, ...	...	...	7,387	7,036	5,943

The rapid development of Scotstoun and Yoker districts, in which many houses for the working classes have recently been erected by the Corporation, made it necessary to open an ante-natal clinic in that district, so that clinics of this nature are now held at eleven centres, compared with ten in the previous year. During the year one clinic was discontinued in Partick in consequence of this change, while another was begun at the new centre in Richard Street.

The total number of sessions held during 1932 was 967, compared with 769 during the preceding year. The attendances at these clinics totalled 33,009, against 25,231 in 1931. Primary attendances again show an increase, these numbering 7,581, or 1,524 more than in the previous year, while subsequent attendances, 25,428, were higher by 6,251. The large increase in the primary attendances is due almost entirely to the obligation placed on midwives by the Central Midwives Board in April, 1931, to ensure ante-natal examination for those who engage them. The number of consultations and attendances at each centre are shown in the following table:—

ATTENDANCES AT ANTE-NATAL CLINICS, 1932.

	No. of Clinic Sessions.	No. of Attendances.		
		Primary.	Subsequent.	Total.
Partick, ...	59	478	1,229	1,707
Cowcaddens, ...	99	714	2,442	3,156
Maryhill, ...	101	505	1,955	2,460
Springburn, ...	104	612	2,167	2,779
Orr Street,...	102	1,091	3,630	4,721
Shettleston, ...	99	654	2,429	3,083
Hutchesontown, ...	104	1,275	4,341	5,616
Govan, ...	99	978	2,540	3,518
Elderpark,...	99	543	2,579	3,122
Richard Street, ...	64	563	1,575	2,138
Blawarthill, ...	37	168	541	709
	967	7,581	25,428	33,009

The following tables show (1) the age of mothers who attended and (2) the conditions requiring attention which were found:—

Ages of Mothers.	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutche-son-town	Shettleston	Govan	Elder-park	Richard Street	Blawart-hill
—20	19	58	32	19	83	71	35	62	32	32	13
—25	92	186	124	159	319	357	162	246	117	156	55
—30	129	207	138	166	258	339	177	230	149	144	83
—35	75	131	111	149	221	287	154	216	137	125	63
—40	51	81	76	94	144	145	73	156	75	63	40
—45	7	22	15	17	50	45	35	50	17	28	9
+45	3	6	—	3	5	1	5	1	1	1	1
Not Pregnant,	3	23	10	7	14	27	10	18	15	13	3
	379	714	506	614	1,094	1,272	651	979	543	562	267

Conditions Found	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettleston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawart-hill
Veneral Disease,	2	12	3	—	33	40	31	15	7	70	1
Varicose Veins,	34	80	141	105	143	105	160	79	60	163	31
General Debility,	35	225	41	59	174	203	399	105	95	92	28
Cardiac Disease,	8	8	6	11	49	11	53	34	48	3	1
Hyperemesis Gravidarum,	3	4	—	—	1	—	4	1	—	—	2
Alimentary Conditions,	80	42	248	127	214	93	582	148	85	345	64
Dentition (Bad),	128	257	294	214	274	345	342	414	155	370	98
Contracted Pelvis,	6	27	29	8	34	8	18	23	15	44	5
Kidney Disease (Albuminuria),	40	191	87	120	132	101	262	115	35	31	25
Respiratory Disease,	11	15	11	35	117	10	68	59	31	36	13
Hæmorrhage,	94	5	48	6	16	19	30	16	19	13	5
No apparent disease,	97	70	—	—	125	80	131	126	101	7	62
Other conditions,	63	24	495	50	247	66	90	54	23	185	40
	601	960	1,403	735	1,559	1,081	2,170	1,189	674	1,359	375

The conditions found on medical examination are enumerated in the above statement, but as in many cases two or three causes of illness were present, the total number of conditions is much in excess of the number of mothers. The most frequent conditions requiring attention were those of the alimentary system (including constipation), general debility, varicose veins, and albuminuria.

As in former years, about 17 per cent. were primiparæ, as shown in the following summary:—

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettleston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawart-hill
Primiparæ, ...	59	230	90	82	189	95	217	130	71	81	38
Multiparæ, ...	317	461	406	525	891	546	1,028	831	457	468	226
Not Pregnant,	3	23	10	7	14	10	27	18	15	13	3
Total, ...	379	714	506	614	1,094	651	1,272	979	543	562	267

The results, so far as known, as to whether delivery resulted at full term, prematurely, &c., are here given, together with the number of still-births:—

PREVIOUS YEAR'S CASES TERMINATED IN 1932.

	Partick	Cow-cad-dens	Mary-hill	Spring-burn	Orr Street	Shett-leston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawarthill	Total
...e, ...	119	132	106	145	169	138	243	177	136	79	2	1,446
...l-Births, ...	5	5	4	3	4	4	1	2	11	5	1	45
...l-term, ...	124	128	99	148	167	142	240	177	144	81	3	1,453
...mature, ...	—	9	11	—	6	—	4	2	3	3	—	38
...ortion or	—	1	2	—	1	3	2	1	—	1	1	12
...miscarriage,	—	—	—	—	—	—	—	—	—	—	—	—
...t District and	4	4	5	2	2	5	3	4	—	3	—	32
...o trace, ...	—	3	4	—	4	5	3	2	2	3	—	26
...Pregnant, ...	—	—	—	—	—	—	—	—	—	—	—	—
...d before	—	—	1	—	—	—	—	—	—	—	—	1
...termination, ...	—	—	—	—	—	—	—	—	—	—	—	—
	128	145	122	150	180	155	252	186	149	91	4	1,562

Note.—Cases transferred from Partick to Blawarthill (4); and from Shettleston to Maryhill (1).

1932—CASES.

	Partick	Cow-cad-dens	Mary-hill	Spring-burn	Orr Street	Shett-leston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawarthill	Total
...e, ...	304	489	362	422	807	493	854	702	382	408	200	5,423
...l-Births, ...	6	17	14	18	37	13	31	17	13	13	8	187
...l-term, ...	308	476	347	421	821	492	834	702	382	400	208	5,391
...mature, ...	2	30	29	19	23	14	51	17	13	21	—	219
...ortion or	2	7	6	5	6	4	22	11	6	5	1	75
...miscarriage,	—	—	—	—	—	—	—	—	—	—	—	—
...t District and	2	6	3	3	5	4	20	8	1	2	1	55
...o trace, ...	—	—	—	2	—	—	2	—	1	—	—	5
...d before	3	23	10	7	14	10	27	18	15	13	3	143
...Pregnant, ...	62	172	111	157	225	127	316	223	125	121	54	1,693
...Terminated, ...	—	—	—	—	—	—	—	—	—	—	—	—
	379	714	506	614	1,094	651	1,272	979	543	562	267	7,581

Among the 7,101 patients whose pregnancy terminated in 1932, 40 deaths occurred, which is equivalent to a death-rate of 5.6 per thousand births. The rate for the preceding year was 4.6. This higher mortality was almost entirely due to an increase in the deaths from puerperal sepsis, 17 being recorded as against seven in 1931. Of the seventeen deaths from septic conditions, nine were certified as sepsis, three as peritonitis, one as associated with pulmonary tuberculosis and pelvic cellulitis, one each with dystocia, valvular disease of the heart, and cerebral embolism, and two with broncho-pneumonia, one of which had also pleural effusion. The other ante-natal deaths were as follows:—

Hæmorrhage following Abortion,	2	Influenza, ...	1
Puerperal Hæmorrhage, ...	4	Pulmonary Tuberculosis, ...	1
Puerperal Albuminuria and Con-		Non-Malignant Tumours, ...	1
vulsions, ...	2	Epilepsy, ...	1
Other Toxæmias of Pregnancy,	1	Diseases of the Arteries, ...	1
Puerperal Embolism and Sudden		Respiratory Diseases, ...	4
Death, ...	1	Nephritis (not of pregnancy), ...	1
Other accidents of Childbirth,	3		

Thus ten of the deaths had probably little association with the puerperal state, although in some it may have been a contributing cause.

The number of still-births, 232, occurring among the pregnancies included in this analysis represents a rate of 3.4 per cent., compared with the average for the city of 4.2 per cent. The still-births among the cases which attended during the previous year amounted to 3.3 per cent.

A comparison of the births occurring at full time or otherwise shows that during 1932 premature births formed about 3.6 per cent. of the total, as compared with 3.7 per cent. for the previous year. Abortions equalled 1.2 per cent. of the pregnancies, compared with 1.7 in 1931.

The month of pregnancy at which the first attendance was made at the clinic is given below; almost two-thirds attended by the seventh month.

Month of Attendance.	Partick	Cow-cad-dens	Mary-hill	Spring-burn	Orr Street	Shett-leston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawart-hill	ota
1 ...	—	—	1	1	—	4	9	—	—	—	—	18
2 ...	3	30	11	5	10	28	53	9	1	6	2	58
3 ...	18	44	12	25	41	36	85	14	24	21	15	134
4 ...	26	49	28	59	47	36	116	61	65	27	15	124
5 ...	31	93	72	70	133	75	162	67	68	68	30	364
6 ...	85	118	129	116	197	131	296	141	86	121	60	184
7 ...	101	185	161	183	312	153	276	199	128	173	74	344
8 ...	104	137	78	126	270	150	210	279	108	119	63	344
9 ...	8	35	4	22	70	28	38	191	48	14	5	464
Not Pregnant,	3	23	10	7	14	10	27	18	15	13	3	144
	379	714	506	614	1,094	651	1,272	979	543	562	267	581

MATERNAL MORTALITY.

During the past five years considerable prominence has been given to maternal mortality, and this, as affecting Glasgow, was discussed in the Report for last year. Enquiry into all maternal deaths is still being continued as a routine procedure. Towards the close of the year the Department of Health for Scotland intimated that, in co-operation with the Scientific Advisory Committee and the British Medical Association, it was proposed to carry out an investigation into maternal morbidity in Scotland. The medical practitioners in the city and the child welfare staff are furnishing the required particulars as regards births occurring during the period of the inquiry, which is to last for six months commencing 14th December.

The following statement showing the maternal mortality deaths and rates is made up from figures supplied by the Registrar-General:—

STATEMENT SHOWING MATERNAL DEATHS AND RATE PER THOUSAND BIRTHS IN GLASGOW AND SCOTLAND IN THE YEARS 1928-1932.

	Deaths.					Rate per 1,000 Births.				
	1928.	1929.	1930.	1931.	1932.	1928.	1929.	1930.	1931.	1932.
Accidents of Pregnancy, ...	34	38	28	10	11	1.44	1.67	1.20	0.44	0.48
Puerperal Hæmorrhage, ...	15	25	28	17	23	0.63	1.10	1.20	0.74	1.01
Puerperal Septicæmia, including Post-abortive sepsis,	79	72	65	66	82	3.34	3.16	2.79	2.88	3.61
Æmia of Pregnancy, Albuminuria, Convulsions, ...	36	15	28	26	36	1.52	0.66	1.20	1.13	1.58
Other Puerperal Diseases,	44	40	51	27	27	1.86	1.75	2.19	1.18	1.19
Totals—Glasgow, ...	208	190	200	146	179	8.79	8.34	8.58	6.37	7.87
„ Scotland, ...	—	—	—	—	—	6.98	6.87	6.95	5.91	6.30

The improvement noted in 1931 has not been maintained. During that year 146 deaths from maternal causes occurred, which is equal to a rate of 6.37 per thousand births. In 1932, however, the deaths numbered 179, giving a rate of 7.87. This rate, however, is definitely lower than the corresponding rates for the three preceding years, 1928-30, in the first of which the highest rate (8.79) was recorded. During 1932 deaths from puerperal hæmorrhage numbered 23, compared with 17, and the corresponding rates per thousand births are 1.01 and 0.74. Puerperal sepsis was also responsible for a higher mortality, the deaths numbering 82, against 66 in 1931, the rates being 3.61 and 2.88 respectively.

ULTRA-VIOLET RAY CLINICS.

No alteration has taken place in the arrangements for light treatment of children suffering from rickets, malnutrition, &c.

The number of consultations held weekly at Cochrane Street and Govan Town Hall remain the same as at the end of last year.

The installation and the results of treatment have been fully dealt with in previous reports, so that only the records of numbers treated are here given in respect of 1932.

RECORD OF ATTENDANCES AND CONSULTATIONS DURING 1932.

	Number of Clinics held.	Children, -1 year. Number of Attendances.		Children, +1 year. Number of Attendances.		Mothers. Number of Attendances.		Total Number of Attendances.	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Cochrane Street, ...	149	54	460	521	10,807	33	273	608	11,540
Govan, ...	149	29	241	275	6,994	19	220	323	7,455
	298	83	701	796	17,801	52	493	931	18,995
		784		18,597		545		19,926	

AGES OF CHILDREN ATTENDING FOR THE FIRST TIME—						Cochrane Street.	Govan.
-1 year,	...	...	...	...	...	54	29
-2 years,	...	...	...	...	...	301	142
-3 years,	...	...	...	...	...	133	57
-4 years,	...	...	...	...	...	61	31
-5 years,	...	...	...	...	...	24	11
+5 years,	...	...	...	...	...	2	34
						575	304

REASONS FOR TREATMENT OF CASES ATTENDING FOR FIRST TIME.

CHILDREN—						Cochrane Street.	Govan.
Rickets.	1. Prophylaxis,	...	...	...	...	1	—
	2. Early Rickets,	...	...	...	...	133	59
	3. Moderate Rickets,	...	...	...	...	156	67
	4. Marked Rachitic deformity,	...	...	...	...	100	51
Rickets c. Tetany,	...	...	...	...	...	4	—
Debility after Infectious Disease,	...	...	...	...	...	6	34
Debility after Acute Illness,	...	...	...	...	...	19	18
Debility—weight stationary, or losing, or not thriving,	...	...	...	...	...	90	38
Bronchitis,	...	...	...	...	...	19	15
Malnutrition,	...	...	...	...	...	18	6
Mentally Defective,	...	...	...	...	...	4	—
Nervous Instability,	...	...	...	...	...	4	2
Skin Diseases,	...	...	...	...	...	5	2
Others,	...	...	...	...	...	3	1
Cervical Adenitis,	...	...	...	...	...	13	11
						575	304

MOTHERS—

Pregnancy,	...	...	...	...	...	29	19
Nursing Mothers,	...	...	...	...	...	4	—
						33	19

INFANT VISITATION.

Under the scheme of infant visitation every birth is visited if the notification does not state that a medical practitioner has been in attendance, and the following table shows the record of those visited, together with certain information obtained:—

	1930.	1931.	1932.
Inquiry cards returned, ...	17,670	18,007	18,148
Full information obtained, ...	16,968	17,273	17,455
Doctor found in attendance,	7	6	9
Wrong address, ...	—	—	—
Others, ...	695	728	684
Inquiry cards issued, ...	18,013	17,994	18,157

Of those for whom full information was obtained—

Legitimate, ...	16,081	16,225	16,849
Illegitimate, ...	1,210	1,057	626
Born at full term, ...	16,376	16,333	16,376
Premature births, ...	915	949	1,099

Condition of Infant at Birth—

Well nourished, ...	14,637	14,276	14,659
Fairly nourished, ...	1,318	1,642	1,474
Badly nourished, ...	592	608	601
Still-born, ...	744	756	744

Nature of Feeding at First Visit—

Breast, ...	13,680	13,769	14,013
Artificial, ...	1,891	1,757	1,730
Breast and Artificial, ...	493	528	497
Still-born, ...	744	756	744
Dead at First Visit, ...	483	470	491
Adopted, ...	—	2	—

In addition to home visitation, the nurses attend the Child Welfare Consultations in their own districts. They thus have an opportunity of reporting to the doctor any illness or condition requiring medical treatment, and of following up the case afterwards to see that the treatment recommended is carried out.

TOTAL NUMBER OF VISITS PAID BY NURSES.

	1931.		1932.	
	Primary.	Sub.	Primary.	Sub.
Routine visits, ...	24,378	41,821	23,445	50,014
Special visits, ...	4,697	3,405	5,610	7,262
Puerperal Fever, ...	973	406	1,079	847
Ophthalmia, ...	800	4,292	1,031	4,968
Ante-natal, ...	1,469	333	2,140	823
Others, ...	—	—	519	184
Total, ...	32,317	50,257	33,824	64,098
	82,574		97,922	

The children found alive on the occasion of the first visit by the Health Visitor are classified in the following table under three groups:—

			Well.	Fair.	Bad.	Total.
1930,	...	...	14,031	1,379	119	15,529
1931,	...	...	14,236	1,493	116	15,845
1932,	...	...	14,993	1,276	127	16,396

Generally speaking, those classified as “well” on the occasion of the first visit were not revisited. The following table is a summary of results found at final visit:—

		Still Good.	Much Improved.	Slightly Improved.	No Improvement.	Worse.	Total.
1930,	...	2,775	312	37	11	—	3,135
1931,	...	3,298	253	25	8	—	3,584
1932,	...	3,883	405	14	3	—	4,305

GLASGOW INFANT HEALTH VISITORS' ASSOCIATION.

Working in association with the Public Health Department is the Glasgow Infant Health Visitors' Association, to whom are reported children whom it is desirable to keep under observation during a longer period than is possible by the official visitors. The number of visitors fluctuates around 300.

As the period of visitation generally extends over the first twelve months of life, a complete year must elapse before the results of the visitation can be summarised.

The following is a summary of the results for the years 1929-1931:—

Year.	Year old.	Removed.	Dead.	Ceased to be visited.	Visits Un-necessary.	No In-formation.	Visits Resented.	No Visitor.	Total.
1929,	1,871	308	193	6	10	3	4	1	2,396
1930,	2,181	386	266	10	10	3	2	—	2,858
1931,	1,996	298	213	7	6	—	4	—	2,524

DOMESTIC HELPS.

Since the scheme for supplying Home Helps was inaugurated in Glasgow towards the end of 1924, there has been an increasing demand for their services. In the first year there were only 17 applications, while in 1932 the total had reached 249. The scale of payment is 5s. per day, which is guaranteed by the Corporation. Assistance of this kind for those who can pay this rate is arranged privately, and is not included in the records shown below. Quite a number are being placed in this way as the scheme becomes better known.

Payment for the services of helps is in accordance with a scheme of "necessitousness" based on the scale applicable to grants of milk and meals under the Child Welfare Scheme, with a minimum charge of one shilling per day. The following is a summary of the payments made for services rendered:—

Cases. 1932.	Number of Days Attended. 1932.	Rate per Day.	Amount Paid by Patients. 1932.
171	2,351	1/-	£117 11 0
32	451	1/6	33 16 6
20	253	2/-	25 6 0
16	159	2/6	19 17 6
4	41	3/-	6 3 0
4	71	3/6	12 8 6
2	20	4/-	4 0 0
1932, ... 249	3,346		£219 2 6
1926, ... 107	1,407		102 2 6
1927, ... 118	1,361		105 8 6
1928, ... 132	1,656½		129 11 6
1929, ... 195	2,476		195 2 6
1930, ... 204	2,460½		173 9 0
1931, ... 261	3,331		233 13 6

During 1932, 46 individual helps attended 249 cases for a total of 3,346 days, or an average of 13 days per case. The amount paid in fees was £219 2s. 6d. The helps are remunerated at the rate of 5s. per day, so that the balance falling to be met by the Corporation was £617 7s. 6d.

MATERNITY BUNDLES.

In connection with the Child Welfare movement, a very definite need has been met by the issue of maternity bundles, and in accordance with the practice of recent years these are not issued until the birth actually takes place, as in necessitous cases to which they are issued, it was found that quite frequently the garments supplied were misused. In 1932 bundles, or part bundles, to the number of 1,230 were supplied, compared with 1,141 in 1931 and 800 in 1930. Receipts from those who could make a part payment amounted to £128 3s. 6d., as against £129 4s. 6d. received from this source during the preceding year.

DAY NURSERIES.

Including the Phoenix Park Kindergarten, there are, as in the previous year, six Centres with nursery accommodation. The total attendances of children at these Centres during 1932 was 31,791, in comparison with 35,918 during the previous year.

The following figures show the number of attendances, &c., at each Centre during the year:—

Nursery.	Number of Days open.	Total Attendances during the year.	Average.	Maximum number in one day.	Accommodation for.
Bridgeton, ...	246	7,521	31	40	40
Cowcaddens, ...	253	6,760	26	34	36
Phoenix Park Kindergarten, ...	188	4,597	24	31	31
Milton, ...	191	4,002	21	29	38
Hutchesontown, ...	209	4,768	23	32	38
Kingston, ...	228	4,143	18	24	30

Day Nurseries.—Outbreaks of measles and chickenpox were responsible for reduced attendances at Hutchesontown Day Nursery.

With regard to Phoenix Park Kindergarten, Miss Winifred Anderson contributes the following note:—

“During the past year attendances were affected for some months by whooping-cough, influenza, and chickenpox. Fortunately all the children but one recovered just in time to be present at the Christmas party. The Clynder holiday in June was as usual a great benefit to the children's health and a happy opportunity for adding to their knowledge of country life.

“In the Kindergarten one has seen restless and excitable children develop the habit of quiet sleep, others have learnt to enjoy a variety of wholesome food, including vegetables, which were disliked at first; some have first learnt concentration in the cloakroom work, where self-help is encouraged in every way, for example, in unlacing boots, buttoning slippers, brushing teeth, washing face and hands, &c. One has seen shyness disappear in the interest of the day's work and play, vocabularies increase, the power of co-operation develop, the joy of helping, and real efficiency in it; interest in plants and flowers and gentle handling of them.

“The following question was asked in the course of a Mothers' Evening at the Kindergarten: ‘What reasons would you give to a neighbour for recommending her to send her child to the Kindergarten?’ The replies received were as follows: ‘Because of the good and regular food the children get;’ ‘Because of the good habits and manners they learn;’ ‘Because of the training as a whole;’ finally, as one mother said: ‘For so many reasons that I could not give them all.’”

JUVENILE UNEMPLOYMENT CLASSES.

During the year 26 girls from the Juvenile Unemployment Classes attended the Bridgeton Day Nursery for a course of training in Laundry and Kitchen Work and the Care of Infants. Of these, only eighteen completed the training period of one month. The work done was of a satisfactory standard.

Training was also given at the Day Nurseries to 20 pupils of the College of Domestic Science.

COUNTRY HOMES.

The following analysis shows that 498 children were admitted under the Child Welfare Scheme to the three Country Homes during the year, the two principal reasons for admission being rickets and malnutrition:—

	Mount Vernon.	Scots- toun.	Mount Blow.	Total.
Rickets, ...	44	59	76	179
General Malnutrition and Debility,	32	104	57	193
Bronchitis, ...	8	16	—	24
Debility after acute illnesses, ...	—	4	36	40
Anæmia, ...	46	1	13	60
Nervousness, ...	—	1	—	1
Others, ...	—	1	—	1
	130	186	182	498

The dismissals during the year were 218 from Mount Vernon, 176 from Scotstoun, and 181 from Mount Blow. The condition on dismissal is summarised in the following statement:—

	Mount Vernon.	Scots- toun.	Mount Blow.	Total.
Much improved, ...	128	152	119	399
Not improved, ...	—	1	—	1
Parents leaving City, ...	—	4	—	4
Transferred suffering from infectious disease, ...	23	13	8	44
Taken home by parents (fretting &c.), ...	1	4	29	34
Died, ...	—	—	—	—
For admission to other Institutions, ...	—	2	—	2
Sent home, ...	1	—	—	1
Contacts with cases of Infectious Disease sent home, ...	65	—	25	90
	218	176	181	575

Of the total, 575, discharged from Country Homes during the year, 399 were much improved, while 44 were transferred suffering from infectious disease, and 90 others dismissed as contacts with these. During the preceding year the respective figures were 348 much improved, 39 transferred with infectious disease, and 85 sent home as contacts.

Garscube Cottage Hospital.—This Hospital passed into the hands of the District Nursing Association, and its use was discontinued as from 13th May. For the period from the beginning of the year until 13th May, 64 mothers with their infants were admitted, while the dismissals also numbered 64. The number of days' residence was 812.

MIDWIVES AND MATERNITY HOMES ACT, 1927.

Seven applications for registration were dealt with during the year, six of which were granted and one refused. One of these applications was in respect of a change of address, the others being in respect of new homes. Seven certificates of registration were withdrawn, one being cancelled owing to change of address, one because the keeper had decided to take no more maternity cases, while in the other five instances the businesses had been discontinued.

The following is the number of Maternity Homes on the Register at 31st December, 1932:—

	Registered.	Exempted.
Maternity Hospitals, ...	2	—
General Infirmarys and Hospitals, ...	—	5
Nursing and Maternity Homes, ...	47	3
	49	8

MIDWIVES (SCOTLAND) ACT, 1915.

During 1932 there was a decrease of 3 in the number of midwives who notified their intention to practise (256 against 259 in 1931); the number of these entitled to registration “by examination” is increased from 172 to 181. Those registered as having been “in practice 1914” numbered 75, or 12 less than in 1931. Other changes are as follows:—3 died, 3 left Glasgow, 1 resigned, and 1 reported to the Board. 24 midwives notified their intention to practise for the first time, all of these being entitled to registration “by examination.” A number ceased to notify intention to practise.

A midwife had a fatal case of pemphigus in her practice. Shortly after, the doctor in attendance on this case was called by the same midwife for another baby, the call notice being “baby with rash.” He took the line in the second case, as he had done in the first, that the condition was trifling, and the midwife continued her work without reporting to this department. This baby also died, and there was a fairly extensive outbreak amongst the patients this midwife was attending at the time. No action could be taken under Rule E6, because the doctor did not advise her that the case was of an infectious nature.

With the reduction in the number of births and the readjustment in regard to the attendance at birth, in view of economic conditions, midwives lose about 900 cases and doctors about 450. There were 422 more cases attended by the outdoor Maternity Hospital Staff and an increase of about 700 indoor hospital cases

in city hospitals. These latter may be influenced by the extension of ante-natal supervision, as well as by the depleted incomes of the people. Continued reduction over several years in midwives' cases in comparison with doctors' cases can probably be partially explained by the entry of the district nurse into the field of midwifery. Her cases are largely amongst the class that previously was served by midwives. She attends under medical supervision, the doctor notifying the birth.

The following table summarises the numbers for the year, with relative figures for the two preceding years:—

		1930.	1931.	1932.
Midwives in Practice during year,	...	263	259	256
THE QUALIFICATIONS FOR CERTIFICATION UNDER ACT, HELD BY THE FOREGOING WERE—				
In Practice, December, 1914,	...	91	87	75
C.M.B. (Scotland) Examination,	...	133	133	144
Other recognised qualifications,	...	39	39	37

In the following table some indication is afforded of the number of births attended during the year by individual midwives. It would seem that of the 7,866 births attended by midwives, 6,127 occurred in the practice of midwives with 50 confinements or more in the year:—

BIRTHS NOTIFIED BY MIDWIVES.

		1930.		1931.		1932.	
		Births.	Midwives.	Births.	Midwives.	Births.	Midwives.
Under 50 Notifications,		2,267	139	2,311	145	1,739	132
50-100	..	2,992	41	2,874	40	3,264	48
100-200	..	3,856	28	3,164	23	2,663	20
200-300	..	672	3	456	2	200	1
		9,787	211	8,805	210	7,866	201

STILL-BIRTHS NOTIFIED BY MIDWIVES.

		Midwives.			Still-Births notified.		
Notifications.		1930.	1931.	1932.	1930.	1931.	1932.
1-5,	...	99	105	78	217	205	156
6-7,	...	8	5	3	58	36	20
		107	110	81	275	241	176
Percentage of Births attended,		...	...	...	2.8	2.7	2.2

1930,	...	...	...	In 93 cases, Doctors assisted.
1931,	...	...	...	In 83 " " "
1932,	...	...	...	In 64 " " "

The figures in the two following summaries contain records of ophthalmia occurring in the practice of midwives, so that the numbers are not the same as the actual cases referred to in other sections of this Report:—

CASES OF OPTHALMIA NEONATORUM OCCURRING IN PRACTICE OF
MIDWIVES.

Notifications.	Midwives.			Cases notified.		
	1930.	1931.	1932.	1930.	1931.	1932.
1-5, ...	77	65	65	179	160	157
6-10, ...	16	16	14	114	122	115
11-15, ...	5	7	6	66	91	72
16-20, ...	2	3	4	33	54	68
21-25, ...	1	—	1	21	—	33
Over 25, ...	—	—	—	—	—	—
	101	91	90	413	427	445
Percentage of Births attended, ...				4.2	4.8	5.7

CASES OF PUERPERAL FEVER OCCURRING IN PRACTICE OF
MIDWIVES.

	Midwives.			Cases.		
	1930.	1931.	1932.	1930.	1931.	1932.
1 Case, ...	47	45	44	47	45	44
2 Cases, ...	14	21	14	28	42	28
3 „	17	12	7	51	36	21
4 „	4	3	5	16	12	20
5 „	1	2	4	5	10	20
6 „	1	—	2	6	—	12
7 „	—	1	—	—	7	—
8 „	1	—	—	8	—	—
	85	84	76	161	152	145

NUMBER OF REQUESTS FOR ASSISTANCE TO MEDICAL PRACTITIONERS
IN CASES OF EMERGENCY UNDER RULE.

Notifications.	Midwives.			Requests made.		
	1930.	1931.	1932.	1930.	1931.	1932.
Under 10, ...	70	81	84	281	327	315
„ 20, ...	51	34	41	669	500	611
„ 30, ...	16	22	20	371	544	483
„ 40, ...	15	14	11	518	467	382
„ 50, ...	11	6	3	493	261	126
Over 50, ...	7	11	10	401	656	600
	170	168	169	2,733	2,755	2,517

During the year there were 2,517 occasions on which medical help was called by midwives, which represents 32 per cent. of the total births occurring in the practice of midwives, and compares with 31 per cent. in 1931 and 28 per cent. in 1930. Details of the nature of emergency are not given this year, but the following indicates the period during which medical assistance was called:—

NATURE OF EMERGENCY.

	1930.	1931.	1932.
In all cases in which a woman during pregnancy, labour, or lying-in appears to be dying or is dead, ...	3	1	3
PREGNANCY.—In cases of a pregnant woman, where there is any abnormality or complication, ...	126	128	126
LABOUR.—In the case of a woman in labour at or near term, when there is any abnormality or complication, ...	1,857	1,867	1,675
LYING-IN.—In the case of a lying-in woman, when there is any abnormality or complication, ...	326	333	346
THE CHILD.—In the child, when there is any abnormality or complication, ...	411	407	357
Cannot be classified, ...	10	19	10
Total, ...	2,733	2,755	2,517

DEATHS (NOTIFIED BY MIDWIVES) BEFORE A DOCTOR

WAS IN ATTENDANCE, ...	2 mothers,	12 infants ;
LAYING OUT THE DEAD, ...	4 adults,	3 infants ;
ARTIFICIAL FEEDING, ...	43 Notifications.	

INTIMATION OF EXPOSURE TO INFECTION.

DISEASE .	1930.	1931.	1932.
Puerperal Fever, ...	122	99	92
Measles, ...	9	21	4
Scarlet Fever, ...	9	11	15
Diphtheria, ...	3	2	3
Pneumonia, ...	9	2	5
Erysipelas, ...	3	2	2
Enteric, ...	—	—	—
Chickenpox, ...	—	3	—
Whooping- Cough, ...	2	4	—
Pyrexia, ...	6	29	41
Others, ...	2	7	3
Pemphigus, ...	—	10	8
	165	190	173

Fees to Doctors in Emergency Cases.—In the following table the total amount of accounts for the year ending November is shown, that being the period at which doctors' accounts are made up:—

Years ended November, 1922-25 (Average),	...	...	£1,629	0	6
Do. do., 1926-30, do.,	...	...	1,690	14	6
Year ended November, 1931,	...	...	2,116	18	0
Do. do., 1932,	...	...	1,887	10	0

The practice of issuing accounts with the object of recovering some part of the fee, which was begun as from June, 1922, has been continued, and during the past year £299 1s. has been so recovered, while £22 2s. was withdrawn from medical practitioners' accounts, and accounts for £7 7s. 6d. were deleted.

OPHTHALMIA NEONATORUM.

During the year 1,013 cases of ophthalmia neonatorum were notified, compared with 805 in 1931. Analysis of these notifications indicates that the greater number of the cases are reported by institution nurses and midwives.

CASES OF OPHTHALMIA NEONATORUM ACCORDING TO NATURE OF ATTENDANCE AT BIRTH.

Doctors,	...	...	...	...	...	...	37
Institutions, ...	...	...	...	...	...	...	180
Institution Nurses, ...	...	...	...	...	...	...	351
Midwives, ...	...	...	...	...	...	...	445
							1,013

An analysis has been made, both clinical and bacteriological, of all cases notified. The following is the clinical analysis of the 1,013 notifications:—Ophthalmia, 271; purulent conjunctivitis, 222; simple conjunctivitis, 304; sty, 8; dacrocystitis, 4; blepharitis, 1; pemphigus, 1; birth abnormality, 1; normal, 201; total, 1,013. The period after birth within which the first signs of inflammation appeared is given as follows for the whole series, i.e., within 12 hours, 45 cases; between 12 hours and 4 days, 244 cases; between 4 and 8 days, 301; and over 8 days, 222. This period is important as regards gonococcal infection, as it indicates the probable source of infection. Thus of the total cases, 48 in number, due to this cause, in 19 the first signs appeared within 4 days after the birth of the child, in 21 between 4 and 8 days, and in 8 later than 8 days.

Routine examination for the causative organisms was made in every case reported showing signs of catarrhal inflammation.

The results are given in the following table which has been prepared in accordance with the reports and advice of the City Bacteriologist, who has undertaken the examination and classification of the specimens.

	Ophthalmia.	Purulent Conjuncti- vitis.	Simple Conjuncti- vitis.	Normal.
Gonococcus, ...	48	—	—	—
Staphylococcus, ...	33	30	15	—
Diphtheroid, ...	54	65	91	21
Gram-positive Diplococcus, ...	31	44	50	9
Gram-positive Bacillus and Diplococcus,	8	5	10	—
Gram-positive Bacillus, ...	24	13	17	—
Koch-Weeks Bacillus, ...	11	9	5	—
Streptococcus and Staphylococcus, ...	1	—	1	—
Gram-negative Bacillus (resembling Coliform Bacillus), ...	8	8	7	—
Gram-negative Bacillus and Gram- positive Bacillus, ...	2	1	3	—
Staphylococcus and Gram-positive Bacillus, ...	15	9	8	—
Streptococcus, ...	5	6	6	—
Morax-Axenfeld Bacillus, ...	1	3	4	—
Pneumococcus, ...	—	—	—	—
Gram-negative Diplococcus Group, ...	4	1	2	—
No Organism, ...	26	28	85	171
	271	222	304	201

Dacrocystitis—Staphylococcus, ...	...	...	...	=3
" —Diphtheroid, ...	...	...	...	=1
Stye —Staphylococcus, ...	...	...	...	=4
" —Diphtheroid, ...	...	...	...	=1

Of the total cases, 62 were removed to hospital, and 79 attended hospital for outdoor treatment and made 318 attendances. The others were treated at home or at the Child Welfare Centres by the nurses, who made 5,999 visits.

Analysis of Indoor Cases.—The number of admissions was 78, including cases occurring outwith Glasgow. Two cases were readmitted after dismissal. Bacteriological examination of the 78 cases showed the following result:—Gonococcus, 39; Staphylococcus, 3; Diphtheroid, 16; Gram-positive Diplococcus, 3; Gram-positive Bacillus, 2; Gram-positive Diplococcus and Bacillus, 1; Koch-Weeks Bacillus, 1; Gram-positive Bacillus and Gram-negative Bacillus, 2; Gram-negative Bacillus, 1; Gram-negative Diplococcus Group, 2; No Organism, 8; Total, 78.

The Wassermann test for syphilis was performed in 69 of the 78 cases. In one case the result was positive and the child showed signs of congenital syphilis. In the other 68 the result was negative, and in none of the children was there any evidence of a syphilitic infection.

Results of Treatment.—The results in the gonococcal group of cases were very satisfactory. Of the 48 cases, 46 recovered with no corneal defect. Corneal scar remained in two instances in one eye. In one of these patients there is no impairment of vision, but in the other there is slight impairment. Three children died while in hospital, but the eye condition in all three cases was restored to normal before death. In the non-gonococcal group the total number, 965, recovered without defect.

PUERPERAL FEVER AND PUERPERAL PYREXIA.

Puerperal Fever.—The relative figures showing cases, deaths, &c., for the past ten years are tabulated here for comparison:—

	Cases.	Deaths.	Case Mortality per cent.	Cases per 1,000 Births.	Deaths per 1,000 Births.
1923, ...	278	72	25.9	10.4	2.7
1924, ...	239	61	25.5	9.5	2.4
1925, ...	300	68	22.7	11.8	2.3
1926 (Old City),	307	69	22.5	12.6	2.8
1927, ...	277	61	22.0	11.7	2.6
1928, ...	413	89	21.5	17.5	3.8
1929, ...	516	86	16.7	22.6	3.8
1930, ...	598	86	14.4	25.6	3.7
1931, ...	663	71	10.7	28.9	3.1
1932, ...	710	83	11.7	31.2	3.7

Puerperal Fever and Puerperal Pyrexia.—The number of cases of puerperal fever registered (710) is the highest recorded. While there is no evidence of a decline in incidence, this figure is to be taken as largely due to increasingly accurate diagnosis and certification, a feature which the Regulations which came into force in 1929 were designed to effect. On the other hand, the number of deaths from puerperal fever was 83, which is 12 more than the number occurring in 1931, although this figure is lower than the numbers prevailing in the three preceding years. The case-mortality rate is thus 11.7 per cent., a figure which has shown a progressive decrease over the past ten years, and is additional evidence that the standard of notification is improving. Further, the case-rate per thousand births, which now stands at 31.2, is three times the average of the years prior to the coming into force of the Regulations. The death-rate, which was 3.7 per thousand births, compares with 3.1 in 1931, which, as the table shows, is very similar to the rates obtaining from 1928 onwards.

Hospitalisation.—Of the 710 verified cases, 419, or 59 per cent., were treated in the special wards of the Local Authority isolation hospitals, and 233 in other hospitals and institutions, leaving 58 as treated at home.

Puerperal Pyrexia.—As regards puerperal pyrexia, there were 485 notifications, but of these 199 were subsequently altered to puerperal fever on further investigation. Of the 316 verified cases of puerperal pyrexia, 71, or 22·5 per cent., were admitted for treatment to the isolation hospitals; 143, or 45 per cent., were treated in other institutions, chiefly maternity hospitals, leaving 102 as being treated at home.

Distribution in Time.—The monthly incidence of disease remained remarkably constant throughout the year, although there was a slight increase in March with 75 cases and in October with 74 cases. Cases of pyrexia were also fairly uniformly distributed, with the exception of the month of December, when 60 cases were reported, no doubt due to the prevalence of influenza during that month.

The usual table showing the case-rates and death-rates of puerperal fever and pyrexia according to attendance at birth is appended, with the addition this year of data regarding abortions. It may be pointed out that 529 cases of abortion were treated in the Glasgow Royal Maternity Hospital during the year, i.e., 14·4 per cent. of the total deliveries (including abortions). Also 597 cases of abortion were admitted to the maternity wards of the Local Authority hospitals, i.e., 19·4 per cent. of the total deliveries (including abortions). The admission of abortions to maternity hospitals is an increasing feature of their work, and the following table is given showing the numbers treated in each of the Local Authority hospitals and the percentage of total deliveries, along with a statement of the cases of puerperal fever and pyrexia associated therewith:—

CASES OF PUERPERAL FEVER AND PYREXIA OCCURRING IN LOCAL AUTHORITY HOSPITALS, 1932.

Local Authority Hospitals.	Total Cases.		Cases per 1,000 Births.		Deaths.		Deaths per 1,000 Births.		Case Mortality per cent.	
	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.
Stobhill Hospital, ...	28	24	20·8	17·9	4	2	3·0	1·5	14·3	8·3
Eastern District Hospital,	7	3	17·2	7·4	1	1	2·5	2·5	14·3	33·3
Western District Hospital,	15	6	25·3	10·1	3	1	5·1	1·7	20·0	16·7
Southern General Hospital,	5	1	35·7	7·1	1	—	7·1	—	20·0	—
	55	34	22·2	13·7	9	4	3·6	1·6	16·4	11·8

ABORTIONS ADMITTED TO LOCAL AUTHORITY HOSPITALS, 1932.

Local Authority Hospitals.	Abortions.		Abortion Deaths.		No. of Abortions.	Percentage of Total Deliveries.
	Fever.	Pyrexia.	Fever.	Pyrexia.		
Stobhill Hospital, ...	1	1	1	—	276	17·0
Eastern District Hospital, ...	2	—	—	—	110	23·3
Western District Hospital, ...	2	—	1	—	112	15·9
Southern General Hospital, ...	1	—	1	—	99	41·4
	6	1	3	—	597	19·4

Classification of Pyrexias.—An effort has again been made to distinguish pyrexias due to puerperal infection from those due to other causes. For example, after transferring to puerperal fever 199 of the 485 notifications, there remained 316 cases regarded as puerperal pyrexia accompanying a great variety of clinical conditions, as follows:—

Respiratory.—Pneumonia, 29 (15 deaths); bronchitis, 23 (1 death); phthisis, 20 (3 deaths); pleurisy, 3; influenza, 21. *Circulatory.*—Carditis, 1; phlebitis, 3; thrombosis, 1. *Blood.*—Anæmia, 1. *Urinary.*—Nephritis, 2; pyelitis, 29 (1 death); albuminuria, 4; cystitis, 2; infected hydronephrosis, 1. *Digestive.*—Appendicitis, 1 (1 death); tonsillitis, 5; enteritis, 1; gastritis, 1; quinsy, 1; constipation, 2; hæmorrhoids, 3; tuberculosis of abdomen, 1. *Metabolism.*—Eclampsia, 1. *Lactation.*—Mastitis, 81 (1 death); engorged breasts, 4. *Bacterial Infections.*—Erysipelas, 3 (1 death); scarlet fever, 3; paratyphoid, 1; measles, 1; parotitis, 2; syphilis, 1; gonorrhœa, 2; axillary abscess, 1; abscess of thigh, 1. *Central Nervous System.*—Bell's paralysis, 1. *Psychological.*—Mania, 1. *Accidents of Pregnancy.*—Incomplete abortion, 11; complete abortion, 2; inevitable abortion, 4. *Accidents of Parturition.*—Cæsarean section, 2; episiotomy, 1; fibroid of uterus (hysterectomy), 1 (1 death); carcinoma of cervix, 1; tear of broad ligament, 1. Pyrexias of undefined origin, 35. This includes cases which could be ascribed to no other cause and were probably puerperal infections. In addition, there were 31 other notifications, comprising 22 abortions, and the remainder due to a variety of other conditions not connected with childbirth.

Bacteriological Examinations.—30 specimens were submitted to the City Bacteriologist, comprising blood cultures and swabs.

Nursing Services.—Where home treatment is desired for puerperal cases, the Glasgow District Nursing Association have continued to meet the demand. During the year there were 12 cases attended by the Queen's Nurses, involving 269 visits.

Consultant Services.—During the year 27 consultations with general practitioners were arranged, the home cases being 8, while 19 were admitted to hospital for treatment, with 6 subsequent deaths.

Glasgow Royal Maternity and Women's Hospital.—The special isolation unit recently established in this hospital continues to function on the lines described in last year's Report.

CASE-RATES AND DEATH-RATES ACCORDING TO ATTENDANCE AT BIRTH.

	Cases.			Deaths.			Total Cases.			Cases per 1,000 Births.			Deaths per 1,000 Births.			Case Mortality per cent.	
	Fever.			Pyrexia.			Fever.			Fever.			Pyrexia.			Fever.	
	Pyrexia.	Fever.	Deaths.	Pyrexia.	Fever.	Deaths.	Pyrexia.	Fever.	Deaths.	Pyrexia.	Fever.	Deaths.	Pyrexia.	Fever.	Deaths.	Pyrexia.	Fever.
Doctors, { Doctors only, ... Doctors and Midwives, 22 Doctors and Dist. Nurses, 10	69	33	9	3													
	22	6	5	1													
	8																
	101	47	14	4	101	47	18.2	8.5	14	4	2.5	0.7	13.9	8.5			
Midwives, { Midwives only, ... Queen's Nurse only, 1 Midwives calling Doctors, 36	108	41	20	7													
	1																
	4	5															
	145	45	25	7	145	45	18.4	5.7	25	7	3.2	0.9	17.2	15.6			
Maternity Hospital—Indoor, ...	...	...	...	...	200	99	63.4	31.4	23	3	7.3	1.0	11.5	3.0			
" " Outdoor, ...	...	...	...	...	135	73	29.0	15.7	8	4	1.7	0.9	5.9	5.5			
Local Authority Hospitals, ...	...	...	...	...	55	34	22.2	13.7	9	4	3.6	1.6	16.4	11.8			
Govan Maternity Cottage Hospital—Indoor, ...	...	...	...	...	1	2	1.9	3.9	—	—	—	—	—	—			
Women's Hospital, ...	...	...	...	...	2	1	36.3	18.2	1	—	18.2	—	50.0	—			
Confined outside City—Nursed in Glasgow, ...	...	...	...	...	2	—	—	—	—	—	—	—	—	—			
" " per Glasgow Institutions, ...	...	...	...	...	11	3	—	—	5	1	—	—	—	—			
No-one (Abortions), ...	...	...	...	...	53	10	—	—	11	—	—	—	—	—			
Abortions previously struck off Roll and again convicted, ...	...	...	...	...	1	—	—	—	—	—	—	—	—	—			
Others (Infirmarys, Fever Hospitals, &c.), ...	...	...	...	...	4	2	—	—	2	1	—	—	—	—			
	710	316	29.2	13.0	98	24	4.0	1.0	13.8	7.4							

NOTE.—The City rate per 1,000 births can only be approximate, as a large number of puerperal cases follow abortion, the number of which is unknown. To illustrate this, 529 cases of abortion have been treated in the Maternity Hospital during 1932, in addition to 3,157 births, *i.e.*, 14.4 per cent. of total deliveries, including abortions, and 597 cases of abortion have been treated in Local Authority Hospitals during 1932, in addition to 2,482 births, *i.e.*, 19.4 per cent. of total deliveries, including abortions.

ABORTIONS :—CASE-RATES AND DEATH-RATES ACCORDING TO ATTENDANCE AT BIRTH—Continued.

	Abortions.		Deaths.		Abortions.		Abortions.		Abortions.		Case Mortality per cent.	
	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.
Doctors only, ...	25	8	4	1								
Doctors and District Nurse, ...	1	1	—	—								
	26	9	4	1	26	9	4	1	15·4	11·1		
Midwife and Doctor, ...	1	—	—	—	1	—	—	—	—	—		
Maternity Hospital—Indoor, ...	...	...	...	...	11	4	3	—	27·3	—		
" " Outdoor, ...	...	...	...	...	7	2	—	2	—	100·0		
Local Authority Hospitals, ...	...	...	...	...	6	1	3	—	50·0	—		
Govan Maternity Cottage Hospital—Indoor, ...	...	...	...	...	—	—	—	—	—	—		
Women's Hospital, ...	...	...	...	...	—	—	—	—	—	—		
Confined outside City—Nursed in Glasgow, ...	...	...	...	...	—	—	—	—	—	—		
" " per Glasgow Institutions, ...	...	...	...	...	4	2	3	—	75·0	—		
No-one (Abortions), ...	...	...	...	...	53	10	11	—	20·8	—		
Abortionist (Midwife previously struck off Roll and again convicted), ...	...	...	...	...	1	—	—	—	—	—		
Others (Infirmaries, Fever Hospitals, &c.), ...	...	...	...	...	3	—	1	—	33·3	—		
	112	28	25	3	112	28	25	3	22·3	10·7		

SECTION IV.

INFECTIOUS DISEASES.

The number of cases of the various infectious diseases registered during 1932, and the number treated in Local Authority hospitals and other institutions, are given in the Appendix Table XVII; the seasonal prevalence of each is shown in Table XIX, which gives the numbers registered during each month of the year.

For purposes of comparison, the rates for each disease per million of the population, along with the rates for the preceding four years, are given in Table XVIII of the Appendix. The rates for the principal diseases which have been notifiable over a considerable period are summarised in the following table from 1913 onwards:—

GLASGOW.—CASE-RATE PER MILLION OF THE POPULATION FOR ALL CASES OF INFECTIOUS DISEASES REGISTERED SINCE 1913.

YEAR.	Typhus Fever.	Enteric Fever.	Continued and Undefined.	Puerperal.	Smallpox.	Scarlet Fever.	Diphtheria and Membranous Croup.	Cerebro-spinal Fever.	Phthisis.	Non-Pulmonary Tuberculosis.	All Other Diseases.	TOTAL.
1913,	39	232	7	144	—	4,005	1,934	35	2,552	—	26,247	35,195
1914,	18	340	7	206	—	5,337	1,440	45	2,284	1,088*	21,675	32,440
1915,	9	248	5	175	—	5,973	1,257	167	2,169	1,375	25,389	36,667
1916,	17	158	8	178	—	3,719	1,220	131	2,285	1,270	17,001	25,987
1917,	1	82	4	148	—	1,634	1,146	75	2,435	1,433	27,005	33,963
1918,	49	128	12	151	1	1,193	1,379	67	2,258	1,273	16,045	22,556
1919,	30	103	8	163	5	2,443	1,626	72	1,834	1,083	21,359	28,726
1920,	8	204	13	267	477	3,378	1,809	76	2,009	1,063	25,509	34,813
1921,	6	100	7	299	19	3,272	1,727	56	1,902	1,061	23,965	32,414
1922,	18	79	6	274	—	3,234	1,572	62	1,818	977	31,633	39,674
1923,	2	117	20	259	—	3,321	1,645	59	1,606	1,149	25,805	33,984
1924,	—	76	18	222	2	2,965	1,768	61	1,703	1,137	30,881	38,835
1925,	—	41	8	279	—	3,551	1,617	58	1,490	1,039	22,309	30,430
1926,†	7	92	4	283	—	4,350	2,130	60	1,646	945	31,865	41,385
1927,	—	136	4	254	—	3,777	2,785	72	1,489	1,010	32,021	41,550
1928,	—	53	4	379	—	2,971	2,414	94	1,582	1,016	29,368	37,880
1929,	—	78	4	474	20	3,079	1,944	186	1,656	911	28,838	37,192
1930,	2	129	4	549	3	4,555	2,407	136	1,549	962	32,002	42,298
1931,	1	102	3	609	—	6,449	1,937	167	1,564	897	36,942	48,671
1932,	—	69	1	649	—	8,365	1,967	138	1,573	874	25,757	39,393

* Non-pulmonary tuberculosis made compulsorily notifiable, July, 1914.

† Rates are for extended city.

The above table shows the movements in the principal infectious diseases in recent years. The outstanding feature is the continued heavy incidence of scarlet fever, the rate for which is 8,365 per million of the population in 1932, compared with 6,449 in the previous year and 2,971 in 1928, when the present rise began. Enteric fever is considerably reduced, while puerperal fever is, if anything, tending to increase. There is a decided drop in the rate for "All other diseases" because of the smaller numbers of both measles and whooping-cough registered within the calendar year. The various diseases are dealt with in detail in the pages which follow.

DISEASES FORMERLY CALLED "PRINCIPAL ZYMOTIC DISEASES."

The death-rates for several periods have been :—

1881-1890, 3.000 per 1,000 living.	1926, 1.257 per 1,000 living.
1891-1900, 3.282 ,,	*1927, 1.141 ,,
1901-1905, 2.660 ,,	1928, 1.232 ,,
1906-1910, 2.450 ,,	1929, 0.874 ,,
1911-1915, 2.424 ,,	1930, 0.984 ,,
1916-1920, 1.607 ,,	1931, 1.394 ,,
1921-1925, 1.303 ,,	1932, 0.960 ,,

* Diarrhoea over 2 years excluded.

In this comparison only those infectious diseases that have been notifiable for most of the period given are included.

SMALLPOX AND VACCINATION.

The city has remained free of smallpox despite its presence in mild form in certain parts of England and Wales. Under the Public Health (Infectious Disease) Regulations (Scotland), 1932, notification of chickenpox ceased as at 31st December.

Vaccination.—Since the Vaccination (Scotland) Act, 1907, came into force returns have been obtained from the Registrars of Births, &c., at the end of each quarter giving particulars of children not vaccinated because of conscientious objection. The Health Committee decided to discontinue these returns, as they appeared to have little practical value.

The following table summarises the results of the procedure

under the Vaccination Acts, and shows that about 50 per cent. of children are successfully vaccinated in infancy:—

TABLE SHOWING RESULTS OF PRIMARY VACCINATION OF CHILDREN BORN DURING SEVERAL YEARS.

(From the Detailed Annual Reports of the Registrar-General.)

Year.	Successfully vaccinated. Per cent.	Insusceptible of vaccine disease. Per cent.	Died before vaccination. Per cent.	Conscientious objection to vaccination. Per cent.	Vaccination postponed. Per cent.	Unaccounted for. Per cent.
1906,	82.9	0.5	10.6	0.2	0.8	5.0
*	*	*	*	*	*	*
1914,	51.7	0.9	12.1	25.1	1.8	8.4
*	*	*	*	*	*	*
1929,	53.9	3.7	8.1	27.1	1.6	5.6
1930,	53.3	2.2	8.3	29.7	1.5	5.0
1931,	51.2	3.0	8.1	31.9	1.5	4.3

The total number of children vaccinated at clinics held at the Child Welfare Centres in the various districts of the city was 2,933, compared with 2,629 in 1931. The following table shows the number of children vaccinated at the various centres during the past three years:—

STATEMENT SHOWING NUMBER OF INFANTS VACCINATED AT THE CHILD WELFARE CONSULTATIONS DURING THE YEARS 1930-1932.

Centre.	1930.	1931.	1932.
Public Health Office, ...	261	494	731
Garngad, ...	12	—	—
Maryhill, ...	153	223	180
Govan Town Hall, ...	108	123	114
Adelphi Street, ...	228	343	395
Partick, ...	143	142	85
Weir Street, ...	89	146	139
Bridgeton, ...	521	609	623
Shettleston, ...	254	303	293
Elder Park, ...	88	104	95
Springburn, ...	32	39	141
Richard Street, ...	98	103	105
Blawarthill, ...	—	—	32
	1,987	2,629	2,933

TYPHUS FEVER.

No case of this disease occurred during the year. There have been only three cases of typhus in the city since 1927.

ENTERIC AND PARATYPHOID FEVERS.

The following report on the incidence of these fevers is contributed by Doctors C. M. Smith and E. Bloch. This section of the Annual Report has been written in somewhat fuller detail than in former years, and, by presenting future reports along similar lines, it is hoped to be able to accumulate data of some epidemiological importance. During 1932 there occurred 74 cases

of enteric infection. The number of cases notified and the number verified were as follows:—

			B. Typhosus	Paratyphoid B.	Total.
Cases notified,	...	...	98	21	119
Cases verified.	...	...	47	27	74

In the eight years, 1924 to 1931, the average annual number of verified cases has been 95, so that the incidence of the disease in 1932 has fallen somewhat. No extensive grouping of the cases occurred in connection with milk, food, or any institution. There were nine deaths from enteric fever, giving a case mortality rate of 12 per cent. Eight deaths were due to typhoid and one to paratyphoid B, and accordingly the death-rate from the former (17 per cent.) was much higher than the latter (3·7 per cent.).

Geographical Distribution.—The largest number of cases (23) occurred in the South-Eastern Division, where there were five families in which more than one person was infected. In the Central Division 19 cases were registered; in the Northern Division 16 cases; and in the Eastern and South-Western Divisions each reported only 8 cases.

Seasonal Distribution (according to dates of sickening):—

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
B. typhosus, ...	4	4	2	7	2	3	3	7	6	4	4	1	47
Para-typhosus B.,	5	—	2	1	2	2	6	4	2	1	1	1	27
	9	4	4	8	4	5	9	11	8	5	5	2	74
	17			17			28			12			
	1st Qr.			2nd Qr.			3rd Qr.			4th Qr.			

From the table it will be seen that the disease has maintained its normal seasonal distribution, the highest incidence falling in the third quarter of the year.

Age and Sex Distribution.—The age and sex distribution of the cases was as follows:—

	-1	-5	-10	-15	-20	-25	-35	-45	-55	-65	65+	Totals.
B. typhosus—												
Males, ...	—	2	4	3	3	1	2	1	—	1	—	17
Females, ...	—	5	6	2	2	3	4	7	1	—	—	30
Para B.—												
Males, ...	1	—	2	1	4	—	—	2	—	—	1	11
Females, ...	—	—	2	2	3	1	5	1	1	1	—	16
Totals, ...	1	7	14	8	12	5	11	11	2	2	1	74

Some frequently-described features of the age-incidence of enteric fever are illustrated, e.g., its occurrence below 5 years, an increase in its incidence from 5-10 years, and a decline after 40 years. Despite the distance from the war-time period of preventive inoculation of males, the ratio of male to female cases remains in the proportion of 61 of the former to 100 of the latter;

this ratio first fell below 100 in 1917. From 1920 to 1929 it exceeded 100 only in 1927, with a minimum of 57 in 1925.

Examination of Contacts.—The following table shows the number of cases in connection with which laboratory examination of specimens from contacts was made, the total number of persons regarded as contacts, the number of contacts examined, and the number found positive.

	B. Typhosus.	Para. B.	Total.
No. of cases verified, ...	47	27	74
No. of cases in connection with which <i>no</i> specimens from contacts were examined, ...	9	7	16
No. of cases in connection with which specimens from contacts were examined, ...	38	20	58
No. of persons regarded as contacts of the latter, ...	+10 160	103	263
Do. do.	-10 43	38	81
No. of contacts examined by means of specimens, ...	+10 114	97	211
Do. do.	-10 39	38	77
No. of contacts found positive, ...	16	3	19

In the above table laboratory examination of contacts includes Widal tests as well as bacteriological examination of specimens of urine and fæces. The number of specimens examined was 530, and the frequency with which examination of contacts was carried out is shown by the following statement:—

Number of specimens examined per contact (irrespective of nature of specimens—whether urine, fæces, or blood), ...	1	2	3	4	5	6	10
Number of contacts from whom above number of specimens was examined, ...	139	101	16	25	5	1	1=288

Further details of the 530 specimens submitted are as follows:—

NUMBER OF SPECIMENS EXAMINED.

	Enteric.	Para. B.	Total.
Urine, ...	120	60	180
Fæces, ...	123	119	242
Blood, ...	85	23	108
Total, ...	328	202	530

The 108 specimens of blood were submitted from 102 contacts.

Contacts found Positive.—The 19 contacts found positive fall into the following categories:—

	Contacts found positive on first examination of specimens.	Contacts found positive on second examination of specimens.	Contacts found positive on third examination of specimens.	Total.
Secondary Cases, ...	6	2	1	9
" Missed " Cases, ...	1	—	—	1
Return Cases, ...	1	—	—	1
Contact Carriers, ...	4	1	—	5
Chronic Carriers, ...	2	—	—	2
(?) Chronic Carriers, ...	1	—	—	1

The 9 secondary cases were persons who contracted the infection after the occurrence of a previous case in the same house and who were first recognised as suffering from the disease as the result of laboratory examination. The "missed" case, on enquiry, gave a history of an indefinite illness of which the date of sickening was antecedent to that of the case giving rise to examination of contacts. The true nature of the atypical attack would probably not have been recognised but for the positive laboratory findings. The missed case was a female, aged 16 years, infected by *B. typhosus*, and was responsible altogether for 2 cases. The case described as a return case occurred in the Central Division. A woman of 31 years was admitted to hospital in August with *B. typhosus* infection, returned home in November, and infected her son in December. Examination of the mother showed that she was again harbouring the organism. As regards the 5 contact carriers, laboratory specimens were positive, but there was no history of recent symptoms suggestive of enteric fever.

Further particulars regarding these contact carriers are tabulated hereunder:—

Age.	Sex.	Organism.	Number of Infected Persons constituting Group of which Contact Carrier was a Member.	Examinations leading to Detection of Contact Carrier.		
				Urine.	Fæces.	Blood.
3	F.	<i>B. typhosus</i> .	4	Pos.	Pos.	
6	F.	"	3	Pos.	Neg.	
8	F.	"	4	Neg.	Pos.	
15	M.	"	4	{ 1st Examination— Neg. Neg. 2nd Examination— Neg. Pos. Neg.		
75	M.	<i>B. para B.</i>	4			
				—	Pos.	—

These persons were all admitted to hospital, where it was found that the enteric organism was only a temporary invader. The 2 chronic carriers discovered were also in the Central Division. One was a woman of 71 years, who was responsible for the infection of her married daughter, and was discovered in the routine examination of contacts. There was a history that she had suffered from enteric fever in 1882, and she is now regarded as a chronic urinary carrier. The other carrier was connected with the return case previously mentioned. The mother, who, after dismissal from hospital was responsible for infecting her son, was presumably infected in turn by her mother-in-law, who was found to have contracted enteric fever in 1901, and, according to the last examination, is possibly both a urinary and intestinal excreter. The doubtful carrier was found in the South-Eastern Division. In a family of eleven persons, 3 cases of enteric fever occurred. After the first case was notified, routine examination of the contacts showed that the father gave a positive Widal. He was an Italian hairdresser of 56 years, and gave a

history that, while a boy in Italy, he had suffered from typhoid. Four specimens of urine and 5 of faeces were examined, with negative results, so that, although he may quite well be a chronic carrier, definite proof has not been obtained. He is being kept under observation, and further specimens will be examined.

The routine examination of specimens from contacts has been carried on in Glasgow since September, 1922, except for a period of three months from October till December, 1924. A summary of the work from September, 1922, until the end of 1931, is as follows:—

No. of verified cases, ...	...	...	...	...	...	800
No. of contacts examined, ...	...	...	...	...	...	1,608
Contacts found positive—						
Recent "missed" cases,...	...	...	...	...	34	} 58
Contact carriers, ...	...	...	...	...	10	
Chronic carriers, ...	...	...	...	...	14	

(It may be stated that of the 34 cases described as recent "missed" cases, 19 can probably be regarded as falling into the category of secondary cases.)

The 14 carriers were responsible for 20 cases of enteric fever, and consequently in these eight years carriers cannot be regarded as having been important agents in the spread of infection. Probably a more important part is played by "missed" cases.

Carriers.—There are at present 6 known carriers in the city—5 in the Central Division and 1 in the South-Western Division. (1) a male of 40 years. An intestinal excreter of paratyphoid B. This man suffered from paratyphoid B. in July, 1930, and, when examined in December, 1931, the stools were still positive. No examinations were made during 1932. The home contacts, numbering 3, have been protected by prophylactic inoculation. (2) a female of 71 years. A urinary excreter of paratyphoid B. This carrier was discovered on routine examination of contacts after the removal of her daughter to hospital in April, 1932. There is a history of paratyphoid fever in 1882. The contacts refused prophylactic inoculation. This woman's husband suffered from enteric in August, 1882, while her brother had the same disease in September, 1882. (3) A male of 26 years. An intestinal excreter of B. typhosus. This man contracted enteric fever in 1928, and, when last examined in October, 1932, the stools were still positive. He was dismissed from the Army on account of the carrier condition. The home contacts have not been protected by inoculation. (4) A female of 56 years. A urinary and intestinal excreter of B. typhosus. This woman was discovered on routine examination, after her daughter-in-law was removed to hospital with B. typhosus infection in August, 1932. In May, 1933, the urine and stools were still positive. (5) A female of 31 years, the daughter-in-law of No. 4. Intestinal excreter of B. typhosus. Suffered from enteric fever in

August, 1932. After dismissal from hospital, infected her son, and was found to be still harbouring the organism. (6) A female of 56 years. An intestinal excreter of paratyphoid B. Contracted paratyphoid B. in December, 1931, in Harrogate. The stools have been persistently positive. Altogether 29 specimens of faeces were examined during 1932, all giving positive results.

In connection with the investigation of carriers, considerable difficulty is found in obtaining specimens for examination.

Carriers in Hawkhead Mental Hospital.—At the end of December, 1932, there were 15 enteric carriers in Hawkhead Mental Hospital. Three of these are carriers boarded in the hospital from other districts. There are 41 other patients who gave a positive Widal reaction but have not been demonstrated to be carriers. No cases of enteric fever have occurred in the hospital since 1927.

Focal Concentration.—Cases occurred in groups in 13 instances, involving 41 patients. (Of these 41, 5 were contact carriers, but were registered as cases.) In 7 of the groups the patients were all members of the same household, and in the remaining 6, neighbours or relatives not living in the same house as the first case in the group were also affected. There were one group of 5 cases, four groups of 4 cases, three groups of 3 cases, and five groups of 2 cases. The total verified cases being 74, the number of isolated or sporadic cases was 33, which, added to the thirteen groups, gives 46 foci of infection. The following table shows for the period September, 1922, to December, 1932, the focal concentration of enteric fever in the city:—

ENTERIC FEVER.—GLASGOW.—SEPTEMBER, 1922-DECEMBER, 1932.
GROUPED AND SPORADIC CASES.

(From October, 1923, to December, 1924, is excluded, as during this period the necessary information is not available.)

Year.	No. of Groups.	Cases in these Groups.	Sporadic Cases.	Total Cases.
1922-3, ...	8	23	95	118
1925, ...	3	6	38	44
1926, ...	5	17	83	100
1927, ...	6	85	63	148
1928, ...	5	30	27	57
1929, ...	4	11	70	81
1930, ...	11	37	103	140
1931, ...	10	62	50	112
1932, ...	13	41	33	74
Total,	65	312	562	874

That in enteric fever sporadic cases should form 64 per cent. (562 out of 874) of the total is a feature which is perhaps not generally appreciated.

Source of Infection.—The source of infection of the 46 foci of disease discovered during 1932 was traced only in three

instances; 2 patients were infected by chronic carriers and 1 by water supply in Yorkshire. (One patient responsible for the infection of 3 cases might have been infected by roadside water.) To these 3 foci have to be added the 28 group cases infected by the first case in each group, giving altogether 31 cases in which a source of infection was found.

Place of Infection.—11 patients contracted infection outside Glasgow, 5 patients contracted the infection in Lanarkshire, 2 in Dunbartonshire, 2 in Renfrewshire, 1 in Harrogate, and 1 at Denbydale, Yorks.

Institutional Cases.—11 cases can be regarded as institutional cases, but of these, 7 were patients from districts outwith the city who were sent to general hospital either suffering from enteric fever or developing symptoms of disease within fourteen days of admission. These are not, strictly speaking, institutional cases. The remaining 4 cases contracted the infection in an institution. 3 of the institutional cases formed a group, a maid in a general hospital being responsible for the infection of another maid and a patient.

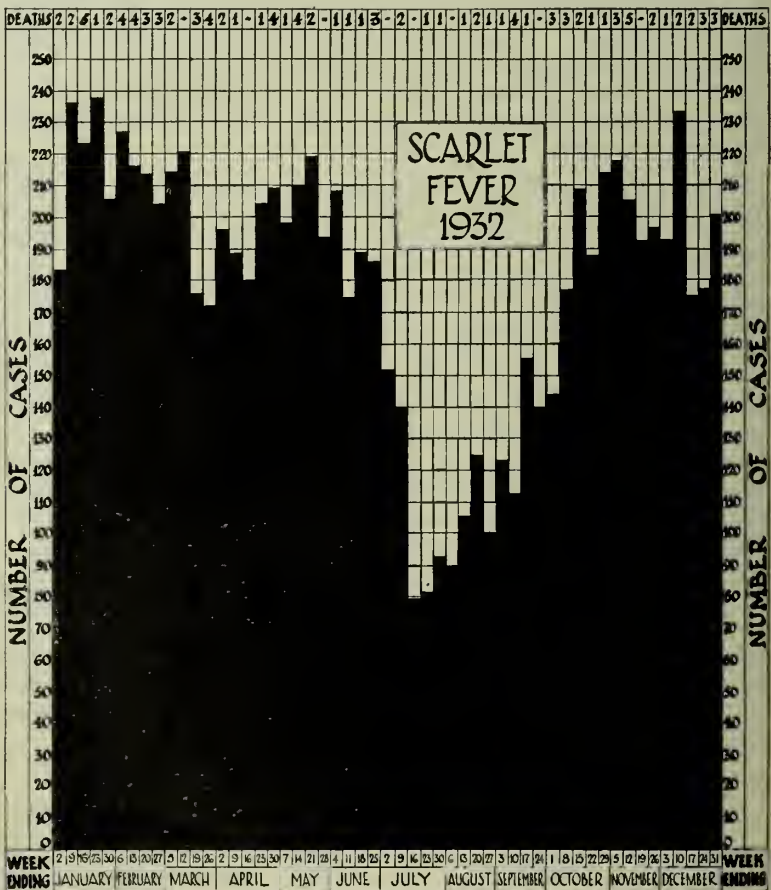
Enteric Fever related to Insanitary Environment.—The main causes of the great decline in the incidence of enteric fever, as Dr. A. K. Chalmers has stated in his "Health of Glasgow, 1818-1925," are concerned with the diminution in surface pollution and with the control of milk supplies. An illustration of what may happen when sanitary conditions fall below a certain standard was offered in the city during the autumn. Two slum properties of farmed-out houses, of which no owner could be found, had fallen into disrepair. Demolition Orders were made, but on account of difficulty in rehousing the tenants, who were on the whole an undesirable class, some months elapsed before the buildings were pulled down. In the interval conditions got worse: there were frequent chokages of sanitary fittings, &c., and, in the absence of owner or factor, there was delay in having repairs effected. During this period, in August and September, 3 cases and 1 temporary carrier of paratyphoid B. and 3 mild cases of Sonne dysentery were discovered in one of the properties, and it was deemed advisable to keep the tenants under close supervision. As the situation constituted a distinct menace, efforts were made to accelerate the process of rehousing.

The following table of death-rates since 1881 shows the marked decline which has taken place:—

1881-1890, ...	0.230 per 1,000	1926, ...	...	0.015 per 1,000
1891-1900, ...	0.215 "	1927, ...	...	0.009 "
1901-1910, ...	0.127 "	1928, ...	...	0.009 "
1911-1915, ...	0.058 "	1929, ...	...	0.006 "
1916-1920, ...	0.023 "	1930, ...	...	0.009 "
1921-1925, ...	0.058 "	1931, ...	...	0.010 "
		1932, ...	...	0.008 "

SCARLET FEVER.

During 1932 the incidence of scarlet fever was exceptionally high. Apart from a lull during July, August, and September, a weekly average of approximately 200 new cases was registered. The total number of cases registered during the year was 9,158, of whom 7,155 were admitted to the fever hospitals and 2,003 were treated at home. The number of deaths was 102, which is equal to a case-mortality rate of 1.1 per cent. The type of scarlet fever prevalent throughout the year tended to be mild. The following diagram shows the weekly incidence of cases, and it may be noted that the high prevalence at the beginning of the year was a continuation of the autumn epidemic of the preceding year:—



An analysis of the diagram shows three subsidiary waves of increase, each associated with the opening of schools after

Christmas, Easter, and the summer vacation. One epidemic associated with a suspected milk supply occurred, i.e., during the last week of the year in the North-Western district of the city, and this epidemic is reported separately.

The age-incidence of cases is shown in the following table:—

INCIDENCE OF SCARLET FEVER DURING 1932 IN AGE GROUPS.

			Hospital Cases.	Home Cases.	Total.	
					Male.	Female.
— 1 year,	...	...	39	19	33	25
— 2 years,	...	...	253	65	158	160
— 5 "	...	...	1,615	374	1,003	986
— 10 "	...	...	2,825	792	1,619	1,998
— 15 "	...	...	1,243	366	662	947
— 20 "	...	...	452	145	244	353
— 25 "	...	...	270	70	106	234
— 35 "	...	...	298	90	128	260
— 45 "	...	...	114	54	58	110
— 55 "	...	...	33	20	21	32
— 65 "	...	...	9	9	5	13
+ 65 "	...	...	2	1	1	2
Totals, ...			7,153	2,005	4,038	5,120

Secondary Cases.—Of the total number of 7,155 cases treated in hospital, 778 were secondary cases, or 10·8 per cent. of the total, a secondary case being one sickening within 14 days of the removal to hospital of the primary case. Thus, 6,377 primary cases were followed by 778 secondary ones. Owing to the pressure on the hospital accommodation, delay in removal to hospital was frequently unavoidable, but it did not appear that delay materially affected the incidence of secondary cases in the households affected. In 526 of the total number of secondary cases there was some element of overcrowding at home.

Home Cases.—The policy adopted was to treat as many cases of scarlet fever at home as circumstances permitted, in order that the available hospital accommodation could be used to the best advantage for this and other diseases. Altogether, 2,003 cases of scarlet fever remained at home, and associated with these were 237 secondary cases, or 11·8 per cent. of the total. A secondary case in this category means one occurring at any time within 14 days of final disinfection. This figure compares favourably with that for secondary cases associated with those removed to hospital, namely, 10·8 per cent., although it is higher than the corresponding figure for 1931, which was 7·2 per cent. A considerable number of the cases nursed at home were living under conditions where complete isolation could not be attained,

and 52 of these secondary home cases arose where the conditions were not ideal. It is difficult to assess accurately the incidence of secondary cases as regards patients treated in hospital or at home on a strictly comparable basis, as a number of factors, such as promptness of removal, infectivity and number of susceptible persons in the family, would require to be taken into account. Difficulty of comparison was increased by the fact that during the height of the winter incidence it happened that a considerable number of patients were treated at home under conditions not quite desirable; while, as regards others there was some unavoidable delay owing to pressure on accommodation for pneumonia and other acute infections. Nevertheless, the broad data available and the experience gained suggest that a judicious policy of home treatment of scarlet fever is permissible as a routine to a greater extent than has been customary in the past.

Hospital Return Cases. — There were 347 return cases associated with the total of 7,265 dismissed from hospital during the year, equal to 4·8 per cent. A hospital return case is one sickening within 28 days after the dismissal of a convalescent case from hospital. The percentage rate of return cases was practically the same whether patients were dismissed after 4, 5, 6, or more weeks' residence in hospital. Of the total 347 return cases, 207 arose in families where there was some element of overcrowding.

Outbreak of Scarlet Fever on a Milk Supply. — The following incident is unique in several respects. Between 14th December, 1932, and 1st January, 1933, there sickened, in a circumscribed area in the north of the city, 81 cases of scarlet fever of a fairly severe character, associated with milk from a local dairy farm. There occurred also a considerable number of cases of acute sore throat among the contacts, while, during the outbreak, 10 cases of erysipelas were found on the same milk supply, some in association with scarlet fever and others in association with sore throat. In spite of frequent and careful examination of the farmworkers and their families, no cases of scarlet fever were detected. The farmer, his wife, and a milker contracted influenza on or about 25th December, associated with sore throats. The only abnormality was the presence of sores on the udders of several of the cows. This outbreak was difficult to deal with, and the infection of the milk was persistent. A full investigation is being made by the City Bacteriologist into the hæmolytic streptococci isolated from the patients and from the sores on the udders, and the facts of this unusual outbreak will be more completely reported later.

The death-rate from this disease since 1881 is shown in the following table:—

1881-1890, ...	0.490 per 1,000	1926, ...	0.083 per 1,000
1891-1900, ...	0.295 „	1927, ...	0.040 „
1901-1910, ...	0.116 „	1928, ...	0.031 „
1911-1915, ...	0.163 „	1929, ...	0.037 „
1916-1920, ...	0.060 „	1930, ...	0.038 „
1921-1925, ...	0.065 „	1931, ...	0.068 „
		1932, ...	0.093 „

DIPHTHERIA.

The incidence of diphtheria in 1932 remained much the same as in the preceding year, the rate per million of the population for these years being respectively 1,967 and 1,937. During the year 2,153 cases were registered, of which 2,089 were removed to hospital, or 97 per cent. of the total, which is the same proportion as in 1931. Despite the pressure on hospital accommodation for both scarlet fever and pneumonia, a sufficient number of beds has always been made available for cases of diphtheria. Very little use is made of facilities for home treatment.

The highest prevalence was in Whiteinch, because of the large population in that ward, especially young children at susceptible ages transferred to housing schemes situated in that district. The mortality, however, was heaviest in Pollokshaws Ward, where the rate was 389 per million of the population, compared with 109, the average for the city.

The deaths registered during 1932 numbered 119, representing a case-mortality rate of 5.5 per cent., compared with 5.6 per cent. in 1931.

The following table shows the death-rates per 1,000 living since 1881:—

1881-1890,	0.280 per 1,000 living.	1926, ...	0.121 per 1,000 living.
1891-1900,	0.231 „	1927, ...	0.104 „
1901-1905,	0.134 „	1928, ...	0.128 „
1906-1910,	0.205 „	1929, ...	0.124 „
1911-1915,	0.187 „	1930, ...	0.133 „
1916-1920,	0.143 „	1931, ...	0.109 „
1921-1925,	0.123 „	1932, ...	0.109 „

ERYSIPELAS.

Erysipelas was again less prevalent, 1,045 cases being recorded, against 1,097 in 1931. Fully 50 per cent. of the cases were treated in hospital. In the Report for last year a table was introduced to show the coincident rising tendency of the streptococcal diseases, scarlet fever, puerperal fever, and erysipelas.

Although both the former diseases continued their increased prevalence, the case rate per million of the population for erysipelas is slightly lower this year, 955 compared with 1,008, which is higher than the average of recent years. The seasonal incidence of erysipelas is given in Appendix Table XIX, and the case-rates for the years from 1928 in Table XVIII.

DISEASES OF THE CENTRAL NERVOUS SYSTEM.

Cerebro-spinal Fever.—Cases of cerebro-spinal fever were less numerous during the year, 151 being registered, compared with 182 in 1931. All of these, with the exception of 7, were treated in hospital. There was no excessive prevalence in any district, most cases occurring in wards with a large child population. The incidence was highest in the first half of the year. The deaths numbered 84, compared with 129 in 1931, and the respective death-rates were 77 and 119 per million of the population.

Encephalitis Lethargica.—11 cases of encephalitis lethargica were registered, compared with 10 during the preceding year, but the diagnosis was mostly in doubt.

Acute Polio-Encephalitis.—No case of this disease was registered during 1932.

Acute Poliomyelitis.—Only 4 cases of this disease were recorded in 1932, the same as in the preceding year. 2 of the cases were removed to institutions other than fever hospitals.

POST-ENCEPHALITIS LETHARGICA.

The number of cases of post-encephalitis lethargica in Glasgow at the end of 1932 when the last survey was made was 358, of whom 219 were males and 139 females. Only 2 acute cases of encephalitis lethargica were notified and verified during the year, and there were 19 deaths.

The age-distribution is as follows:—

			Males.	Females.	Total.
—15 years,	...	...	17	9	26
—20 "	...	...	47	16	63
—30 "	...	...	76	62	138
—40 "	...	...	33	30	63
+40 "	...	...	46	22	68
			219	139	358

Physical Condition.—The physical condition of 279 of the cases as recently ascertained is shown in the following table:—

	Males.	Females.	Total.
Fit for school, ...	9	7	16
Unfit for school, ...	4	2	6
Fit for housework, ...	—	37	37
Fit for employment, ...	59	27	86
Unfit for going about, ...	80	31	111
Bedridden, ...	14	9	23
Total, ...	166	113	279

Hospital Cases.—There were at the end of the year 74 patients in the wards allocated to post-encephalitis lethargica in Stobhill Hospital, many of whom have been in residence for several years, 16 for periods of from 5 to 9 years, and 24 for periods of 3 to 5 years. In addition there are 80 patients in general and mental hospitals.

In the Annual Report for 1930 (page 165), the progress of a group of 70 cases, who sickened in 1923 and had been under the continuous observation of Dr. Ashie Main of this department, was noted. Of these 70 cases, 40 still survive. 6 have completely recovered; 19 have shown incomplete recovery, with nervous or physical defects; and 15 show the marked mental and physical changes of Parkinsonism. Dr. Main has personally supervised the progress of this group, and her observations afford a very accurate index of the probable fate of the mass of patients affected by encephalitis lethargica during the 1923 epidemic.

MEASLES.

Measles was not prevalent, except during the first month or two of the year when the autumnal epidemic of the previous year was drawing to a close. Of the total cases recorded, 5,579, about half were registered in January. As 15,372 cases were registered in the previous year, the total cases occurring in the 1931-32 epidemic was approximately 20,000, which was the highest since 1925-26, and is, therefore, one of the major epidemics to which the city is subject from time to time. The case-rate per million of the population since 1928 is given in Appendix Table XVIII, while the seasonal prevalence is illustrated by Table XIX. In 1932 the case-rate per million was 5,096, compared with 14,123 in the preceding year. The wards most affected were Anderston, Woodside, and North Kelvin to the north of the river, and Govan and Fairfield to the south,

The deaths numbered 187, which is equivalent to a death-rate per million of the population of 171, compared with 382 in 1931.

German Measles.—There was a considerable prevalence of German measles, 681 cases being recorded, against 115 in the preceding year. This affection is of interest only in relation to scarlet fever, with which it is often confused, and because of the cross-infection of hospital wards to which it gives rise.

WHOOPIING-COUGH.

Whooping-cough was much less prevalent during the year, 4,666 cases being recorded, compared with 9,219 in 1931. As in the case of measles, whooping-cough is a winter affection, so that comparisons for the calendar year are misleading. For instance, the great majority of the cases registered in 1932 occurred in the later months of the year, and are, therefore, part of the prevalence extending into 1933. The total cases registered in the epidemic period of 1931-32 was 15,006, a number sufficient to warrant the description of a major whooping-cough epidemic. Judging from the numbers registered in 1932, the current epidemic will not be so heavy. So far, the disease has prevailed mostly in the east end and in the south-west of the city.

Deaths during the year numbered 128, which is equal to a rate of 117 per million of the population, compared with 426, the rate for the previous year. The explanation of this adverse comparison as regards 1931 is that deaths in that year were due to pneumonia complications during the spring period of the epidemic.

CHICKENPOX.

The compulsory notification of chickenpox, which had been continued from year to year more or less since the war, ceased at the end of 1932. Appendix Table XVIII gives the case-rates per million, and shows that the incidence of chickenpox has remained uniform during the past four or five years. In 1932, 7,138 cases were registered, compared with 7,719 in 1931. Only 179 of the cases were removed to fever hospitals.

OTHER INFECTIOUS DISEASES.

A record of the other infectious diseases dealt with, together with the number of each treated in hospital, is given in Appendix Table XVII. Among these is included ophthalmia neonatorum and various forms of pneumonia, which are dealt with in other sections of the Report. There remains certain other diseases which are briefly mentioned.

ANTHRAX.

A case of suspected anthrax was brought to notice in December. The patient was employed in a tanning factory, and contracted the disease when handling an infected hide which had caused 2 cases in a district in the north of England. In this case no organism resembling the anthrax bacillus could be isolated. Only 1 case of anthrax in animals was reported. The animal, a bullock, was discovered in the cattle market on 11th June, and was destroyed immediately and the premises disinfected.

Goatskin thongs used for binding orange boxes were examined by the Bacteriologist on 22 occasions and 4 samples of cowhide with negative results.

DIARRHŒA AND ENTERITIS.

The following table shows the age distribution of deaths from diarrhœa and enteritis. The number of deaths from these causes under one year of age is the highest recorded since 1921, when, however, the rise was not confined to infants. In 1932, the mortality over one year is below the average of recent years, but under that age there has been a definite increase, 395, compared with 279 in 1931:—

AGE IN YEARS.

			-1	-5	5+	Total.
1929,	...	...	243	57	56	356
1930,	...	...	245	57	53	355
1931,	...	...	279	38	42	359
1932,	...	...	395	38	47	480

The table which follows shows the mortality in each month of the year, and indicates that children are more vulnerable during the autumn months:—

DIARRHŒA AND ENTERITIS.

Month of Death.	Number of Deaths —1 Year.	Mean Temp.	Month of Death.	Number of Deaths —1 Year.	Mean Temp.
Jan., ...	24	42	July, ...	34	58
Feb., ...	32	40	Aug., ...	49	58
March, ...	28	41	Sept., ...	49	52
April, ...	25	42	Oct., ...	47	45
May, ...	39	49	Nov., ...	18	41
June, ...	23	57	Dec., ...	27	41

RABIES.

No case of rabies is known to have occurred, but a number of persons bitten by dogs were reported by the police for inquiry.

These are shown in relation to the season of occurrence and the severity of the bite:—

					Slight.	Serious.
1st Quarter, ...	...	...	...	...	42	2
2nd Quarter, ...	...	...	...	...	64	1
3rd Quarter, ...	...	...	...	...	87	3
4th Quarter, ...	...	...	...	...	46	2
					239	8
					247	
1931, ...	320	1930, ...	274			

In addition to the above, 5 persons were bitten by horses, and 1 bitten by a cat.

TRACHOMA.

The number of cases of definite trachoma on the register at the end of 1932 was 137, a further 9 cases being considered as doubtful. The number of notifications received during the year was 24, and of these 13 were definite cases, 2 were doubtful, and 9 were not trachoma. During the year 12 cases were removed from the register. Of these, 4 were found not to be suffering from trachoma and 8 were considered cured. There were also 14 cases which left the district, and 1 case taken off the register, concerning which no information has been available since 1928. Every endeavour was made to obtain the attendance of home contacts of new cases at the dispensary. Of the 54 home contacts examined, 1 was shown to be suffering from definite trachoma, 1 was doubtful, and 21 were found to be suffering from varying degrees of conjunctivitis, while 31 were negative.

Trachoma Dispensary.—During the year 177 individuals attended the Trachoma Clinic, making 4,236 attendances. Of these, 1,770 were consultations with the ophthalmic surgeon and 2,466 were for treatment by the nurse. 6 operations for expression and 2 for removal of a chalazion were carried out at the clinic. The number of home visits paid by the nurse was 781.

Reference was made in the Annual Report of 1929 to an outbreak of trachoma in a residential home for children and adults. Of the cases connected with this institution, 9 are still inmates and 22 have left, 6 to addresses outside Glasgow, while the others are still under supervision and treatment at the Trachoma Dispensary. Apart from this particular incidence, there are a further 11 patients, all under 30 years, who developed trachoma while resident in institutions of a similar kind, and 2 additional cases in whom signs of the disease were observed within 3 years of leaving an institution. These institutions are

orphanages, homes controlled by religious bodies, and industrial schools, and the period of residence in practically all cases was from 5 to 15 years. These facts indicate that trachoma can spread with greater facility in institutions of the type described than among the community in general.

Hospital.—There were admitted to Stobhill Hospital during the year 19 cases of trachoma, of whom 12 were first cases and 7 readmissions. The operations carried out were as follows:—Expressions, 10; peritomy, 4; cautery, 5; entropion, 1.

Clinical Notes.—Dr. A. Lewis M'Millan, the ophthalmologist in charge of the dispensary, reports that he does not now see very typical cases of trachoma. Some cases have definite pannus, with gelatinous-looking granules in the upper retrotarsal fold, and these he finds appear to benefit by scrubbing with swabs dipped in acriflavine. Many cases are more of a chronic conjunctivitis order without definite granular condition, some having keratitis with ulceration, and many trichiasis which requires epilation. Other cases which appear to be more of a folliculosis order are benefitted by expression. Warty granulations are rarely seen. Chronic conjunctival conditions seem to relapse readily, and the patients sooner or later return to the dispensary after being dismissed.

Dr. S. Spence Meighan, the ophthalmic surgeon in charge of the cases at Stobhill Hospital, states that of the trachoma cases treated there was nothing noteworthy, except that in one instance the occurrence of a purulent corneal ulcer necessitated the opening up of the eyeball. 4 cases were probably not suffering from trachoma, and of these 3 were examples of severe follicular conjunctivitis. It has been found that, as formerly, results of treatment were fairly satisfactory, but that the more recent the case the better the chance of recovery. As regards details of treatment, experience has shown that expression of the follicles, followed by swabbing with silver nitrate sol., and latterly by touching with copper sulphate, has given the best results. Ultra-violet light has been tried by various methods of application, but has not so far proved of any appreciable value.

With reference to the etiology of trachoma, a bacteriological investigation is being carried out in co-operation with Dr. F. E. Reynolds, pathologist, whose assistance Dr. Spence Meighan desires to acknowledge. The main lines of the enquiry have so far been to determine if the B. granulosus of Noguchi is to be recovered from trachoma cases in Glasgow.

MALARIA AND DYSENTERY.

Malaria was registered on 12 occasions, but only 2 required removal to hospital.

There were 136 cases of dysentery (62 under 5 years of age), of which 95 were treated in fever hospitals and 7 in other institutions. This is an increase of 57 over the number registered during the preceding year, cases being more numerous in March and again in the autumn. The disease was most prevalent to the south and south-west of the city, 14 being recorded in Govan, 9 in Kinning Park, and 7 in Fairfield, two contiguous wards, while 10 were recorded in Exchange in the centre of the city. The increase is due to a greater tendency for these patients to be reported and the affection investigated.

INFECTIVE JAUNDICE.

No cases were reported during 1932, and notification, which has been in force for some years, ceased at 31st December.

SECTION V.

RESPIRATORY DISEASES AND TUBERCULOSIS.

The year 1932 was marked by a greater incidence than usual of acute respiratory disease. For instance, 7,555 cases of acute primary and influenzal pneumonia were registered, a figure which is seldom reached in the city unless in the presence of influenza. Pneumonia of the latter type prevailed during the influenza epidemic which commenced in the city early in December, and thereafter reached considerable magnitude. The deaths from pneumonia (1917) were also higher than in the immediately preceding years, a feature which applied to other respiratory diseases, of which there died 815 persons, chiefly from acute bronchitis, while there occurred 454 deaths from acute influenza.

The presence of this epidemic created a somewhat acute hospital problem, and threw a very considerable strain on the outdoor medical services. Of the total 7,555 patients notified as acute primary pneumonia, 4,034 were treated in hospital, or over 53 per cent., as compared with 69 per cent. for the preceding year, when, however, the number of cases was almost 2,000 fewer. During the prevalence of pneumonia some of the nurses employed on child welfare and tuberculosis work were seconded for home visitation of patients with pneumonia for the purpose of ascertaining the home conditions and assisting in treatment, a scheme which works fairly satisfactorily in practice as it is of assistance to home cases and enables choice to be made of the more urgent patients requiring admission to hospital on the basis of the reports received. The following table shows the patients notified and the percentage removed to hospital for a period of years:—

Year.	Cases Notified.	Percentage to Hospital.	Year.	Cases. Notified.	Percentage to Hospital.
1920,	4,533	38	1926,	6,704	55
1921,	3,592	46	1927,	6,252	58
1922,	6,572	43	1928,	6,072	66
1923,	4,465	60	1929,	8,225	58
1924,	7,272	54	1930,	6,765	61
1925,	6,105	59	1931,	5,510	69
			1932,	7,555	53

As regards fatality from the three main groups of respiratory diseases during the year, the following table shows the extent

to which these diseases fluctuate from year to year and the magnitude of the death-rate from each:—

Year.	Pneumonia.		Influenza.		Other Respiratory Diseases.	
	Deaths.	Rate per million.	Deaths.	Rate per million.	Deaths.	Rate per million.
1922, ...	2,303	2,143	767	714	1,477	1,374
1923, ...	1,400	1,303	65	61	972	905
1924, ...	2,198	2,047	412	384	1,283	1,195
1925, ...	1,665	1,551	210	196	1,098	1,023
1926, ...	1,758	1,612	386	354	967	887
1927, ...	1,792	1,644	204	187	881	808
1928, ...	1,801	1,653	210	193	813	746
1929, ...	2,447	2,247	878	806	1,212	1,113
1930, ...	1,774	1,629	160	147	852	782
1931, ...	1,533	1,408	207	190	671	617
1932, ...	1,917	1,751	454	415	815	744

A considerable study has been made during the past two or three years of the problems of incidence and treatment of acute lobar pneumonia and acute broncho-pneumonia by the staffs of the various hospitals, voluntary and municipal, where these affections are treated, and it is worth while recording the various publications which have appeared. A paper, entitled "Treatment of Lobar Pneumonia by Felton's Serum," was published in the "Lancet" on 2nd July, 1932, by Doctors Cowan, Harrington, Cruickshank, Cuthbertson, and Fleming from the Glasgow Royal Infirmary, embodying the results of treatment of 137 cases of lobar pneumonia by Felton's serum, along with a study of the types of pneumococci recovered from a series of 737 patients, most of whom were under treatment in Belvidere Fever Hospital. Dr. Ian M. Christie, of Knightswood Fever Hospital, contributed a paper to the same journal on 26th November, 1932, on "Type Specific Organisms in Acute Pneumonia and in Convalescents and Contacts," followed by a second paper on 4th March, 1933, on "Types of Pneumococci in Post-Influenzal Pneumonia." Dr. Robert Cruickshank, Bacteriologist to the Glasgow Royal Infirmary, has recently published a comprehensive account of his own investigations and those of others associated with this work in the three Milroy Lectures which he delivered before the Royal College of Physicians, London. With regard to acute broncho-pneumonia in children, Dr. J. W. S. Blacklock has carried out extensive investigations at the Sick Children's Hospital, and his results have been published in the "Glasgow Medical Journal" of February, 1933, under the title of "Pneumococcal Infections in Infancy and Childhood." It should also be mentioned that Dr. James Montgomery at Belvidere Hospital has studied the incidence of pneumococci of the various types in patients and convalescents, and has investigated certain modern methods of treatment, while at Ruchill Hospital Dr. Anderson is studying

serum administration. The inception of most of these investigations is due to the interest and enthusiasm of Dr. John M. Cowan, Consulting Physician to the Royal Infirmary.

On the epidemiological side, the following review of the incidence of acute lobar pneumonia in the city appeared in "Public Health" in January of this year, and is here reprinted:—

SOME EPIDEMIOLOGICAL FEATURES OF THE PNEUMOCOCCUS
AND ITS TYPES.

By A. S. M. MACGREGOR, O.B.E., M.D., D.P.H., F.R.F.P.S.(GLAS.), Medical
Officer of Health, City of Glasgow.

The type-infecting organisms in lobar pneumonia have been studied in Glasgow during the past three years at the Royal Infirmary and at the hospitals for infectious diseases as part of a comprehensive scheme of clinical and bacteriological investigation, under the general guidance of Dr. John M. Cowan, Consulting Physician to the Infirmary, and of Dr. Robert Cruickshank, on the bacteriological side. Two papers¹ have been published by these authors along with others. The second embodies the results of the treatment of 137 cases of lobar pneumonia by Felton's serum at the Royal Infirmary, and includes a study of the types of pneumococci recovered from a series of 737 patients, most of whom were admitted during the period to Belvidere Fever Hospital under Dr. James Montgomery. Other investigations by Dr. Ian Christie² at Knightswood Fever Hospital, and by Dr. Thomas Anderson³ at Ruchill Fever Hospital, into the incidence of the various types of pneumococci in acute lobar pneumonia, in convalescent patients and in contacts, are in various stages of progress or are in course of publication. These results of typing, when collected together, furnish a considerable volume of evidence bearing on type incidence in lobar pneumonia, and I have, at the suggestion of Dr. Cowan and with the consent of these investigators, borrowed certain of their results in order to discuss them as a whole in relation to some of the general epidemiological features of lobar pneumonia in the city. The information available about the behaviour of the pneumonias is partial, and many of the following observations are therefore of a tentative character.

Case-Mortality of Lobar Pneumonia.—Lobar pneumonia in Glasgow is most prevalent and as a rule most severe during the first six months of the year, particularly in February, March, and April, which is apparently its period of choice. About half the patients reported are admitted to the hospitals for infectious disease, and a further considerable proportion to the general and voluntary hospitals. In the absence of an accurate knowledge of its incidence, we are dependent on hospital data for information as to the general characteristics of the disease throughout the year. Statistics furnished by the medical superintendents of the three larger fever hospitals, Belvidere, Ruchill, and Knightswood, have been used to calculate the case-mortality of patients treated in hospital since January, 1930, and the figures may be taken to represent about one-half of the cases of lobar pneumonia occurring in the city. Table I gives these hospital cases and deaths arranged in four-monthly periods.

TABLE I.

LOBAR PNEUMONIA, GLASGOW.—CASE-MORTALITY OF HOSPITAL PATIENTS IN
FOUR-MONTHLY PERIODS.

[illegible]

It is the common experience in Glasgow that the most severe cases occur during February, March, and April, and this is borne out by the mortality figures of 21.1 and 20.3 for the first four months of 1930 and 1931. On the other hand, in 1932 there was a high incidence, but with a low mortality of 13.6 per cent. The comparative mildness of the pneumonia of the early part of 1932 may have been due in part to a lessened prevalence of the more severe type II infections in the city (Cowan, Harrington, Cruickshank, Cuthbertson, and Fleming⁴—see page 116). In the first six months of 1930 there were admitted to hospital 598 cases with 108 deaths, in the second six months 411 cases and 60 deaths; the figures for 1931 were 692 cases and 130 deaths, and 476 cases and 48 deaths respectively. Thus lobar pneumonia has a distinct predilection for the early months of the year. Again, the hospital case mortality may differ considerably when similar periods of successive years are compared. How much of this difference may be due to change in type-incidence and how much to altered age-incidence are points still to be determined.

Incidence of Types among Infecting Organisms.—Table II shows the classification into types of the pneumococci recovered from 1,077 patients admitted to various hospitals as above, over the period from January, 1930, to the middle of this year. The numbers are sufficient to form a fairly representative sample of acute lobar pneumonia occurring in the city between these dates, although it must be remembered that grouped statistics of this kind may conceal variations in individual years or parts of a year due to seasonal influence, age-incidence, or severity, and may cover dissimilar phases of the epidemic picture presented by lobar pneumonia.

TABLE II.
GLASGOW.—TYPE-INFECTING ORGANISMS IN LOBAR PNEUMONIA.

Series.	Numbers and Mortality Rates.					Period of Investigation.
	Type I.	Type II.	Type III.	Group IV.	Total.	
1 Royal Infirmary and Belvidere Hospital (Cruickshank), ...	277	255	31	174	737	February, 1930, to April, 1932 (137 cases had serum treatment).
Percentage of Total, ...	37.6	34.6	4.2	23.6	100	
Deaths, ...	26	47	14	15	102	
Case - Mortality per cent. ...	9.4	18.4	45.2	8.6	13.8	
2 Knightswood Hospital (Pratt), ...	38	35	4	23	100	February to June, 1930.
Percentage of Total, ...	38	35	4	23	100	
Deaths, ...	3	3	1	2	9	
Case - Mortality per cent., ...	7.9	8.6	25	8.7	9	
3 Knightswood Hospital (Christie), ...	50	44	2	22	118	November, 1931, to July, 1932.
Percentage of Total, ...	42.4	37.3	1.7	18.6	100	
Deaths, ...	12	11	2	1	26	
Case - Mortality per cent., ...	24	25	100	4.5	22	
4 Ruchill Hospital (Anderson), ...	45	54	5	18	122	October, 1931, to July, 1932.
Percentage of Total, ...	36.9	44.3	4.1	14.7	100	
Deaths, ...	3	15	1	2	21	
Case Mortality per cent., ...	6.7	27.8	20	11.1	17.2	
Total Cases, ...	410	388	42	237	1,077	
Percentage of Total, ...	38.1	36.0	3.9	22	100	
Total Deaths, ...	44	76	18	20	158	
Case-Mortality per cent., ...	10.7	19.6	42.9	8.4	14.7	

The combined results show that pneumonia of types I and II together formed 74 per cent. of all the cases, and that these two types occurred in almost equal proportions, i.e., 38 and 36 per cent. Type III organisms were present in 4 per cent., while the remainder, or 22 per cent., fell into group IV. These relative proportions varied within small limits in each of the series, but the numbers in series 2, 3, and 4 are too few to be conclusive as to change of type-frequency over the periods studied. With regard to this point, however, Cowan, Harrington, Cruickshank, *et al.*,⁵ in their larger series (No. 1) found some evidence of variation in the incidence of types I and II from year to year. For instance, "In the period February-August, 1930, the incidence of types I, II, III, and group 'X' was 32, 45, 2, and 19 per cent.; in the period September, 1930—August, 1931, 37, 32, 5, and 24 per cent.; in the period September, 1931—April, 1932, 42, 29, 4, and 24 per cent."† They conclude that type II was less prevalent in the past winter, a point in keeping with the relative mildness by which the disease was then characterised, as shown by the hospital mortality figures previously quoted.

Variation in Type Frequency.—There was, however, no marked tendency for either of the first two types to assume enhanced responsibility for the pneumonias of any one year to anything like the extent that has been noted elsewhere. It appears that variations in type-incidence may occur as between one locality and another, and in the course of time in the same locality. In Edinburgh the proportions found by Alston and Stewart⁶ in 186 cases in 1929-30 were:—Type I, 29; type II, 40; type III, 4; and group IV, 27 per cent. These authors remark that: "It is interesting to compare our findings with those of Davidson and M'Lachlan, who found during 1924-25, type I in 60 per cent. of cases, and type II in only 12 per cent.," a considerable change during the past five years. F. Griffith⁷ notes a similar alteration of type-incidence between 1920 and 1927, finding that, while type I remained fairly constant, type II diminished from 32.6 to 7.4 per cent., group IV increasing from 30 to 53.7 per cent. A tendency for the more severe type II to vary widely in incidence from year to year would be a matter of considerable epidemiological importance, but could only be settled by much more extensive and prolonged local investigations.

The type-frequency figures found in this investigation are, on the whole, similar to those obtained elsewhere in Britain, which show that 60 to 70 per cent. of the pneumonias are related to types I and II. F. Griffith⁸ summarises the general experience in these terms: "Though variations are observed from year to year in different districts of the same country and in one country as compared with another, the following figures represent the approximate proportions of the various types in Great Britain and the United States of America, viz.:—Type I, 30-40 per cent.; type II, 20-30 per cent.; type III, 0-16 per cent.; type IV, about 30 per cent." In the Glasgow series, type II (36 per cent.) was rather higher than this average. Dr. Griffith remarks: "It is a fact of considerable interest, from the epidemiological standpoint, that the incidence of the chief types of pneumococci in lobar pneumonia is so nearly the same in countries with similar climatic and social conditions." It may be concluded that the pneumococci of types I and II, which were found in three-quarters of the Glasgow cases, were the principal infecting organisms, and, therefore, of most epidemiological significance.

Case-Mortality according to Type.—The case-mortality of the four series combined (which includes 137 patients treated by serum in the Royal Infirmary*) was 14.7 per cent.; that of type I being 10.7 per cent.; type II, 19.6 per cent.; type III, 42.9 per cent.; and group IV, 8.4 per cent. These figures are in accord

* Group "X" is synonymous with group IV.

† Dr. Cruickshank has since furnished me with the more complete figures for the period, September, 1931-August, 1932, which are: type I, 37; type II, 30; type III, 4; group "X," 29 per cent.

‡ These serum-treated patients comprised five cases and one death untyped. The remainder were as follows: Type I, 44 cases with two deaths; type II, 45 cases with eight deaths; type III, six cases with five deaths; group "X," 37 cases with four deaths.

with the general experience that type II pneumonia is more severe than that of type I, that type III is the most fatal of all, but is fortunately infrequent, and that those falling into group IV are relatively mild. Pneumonia in the United States is more severe than this. Type I has a general case-fatality of 25 per cent.; type II, 32 per cent.; type III, 4.5 per cent.; and group IV, 16 per cent. (Craster.⁹) When the different series composing the table are compared, it will be observed that the individual case-mortalities varied from 9 per cent. in the second series to 22 per cent. in the third series, and that the figures for types I and II varied in a similar manner. This may be attributable to the accident of admission to hospital of patients of differing age-groups and severity of the affection, as well as to the small numbers included in each series. The evidence is insufficient to show to what extent the seasonal incidence and severity of lobar pneumonia may be due to a heightened virulence of the prevailing types. These hospital mortality figures for different periods indicate that great caution must be exercised in appealing to case-mortality rates in endeavouring to estimate the clinical results of specific treatment. Controls should be provided for simultaneously with the cases whose treatment is being investigated.

Case-Mortality of Lobar Pneumonia according to Age and Type.—Table III has been prepared to show for the complete series of cases (except series 2) the incidence and severity of the several types in relation to the age of the patient:—

TABLE III.

GLASGOW.—AGE DISTRIBUTION OF CASES AND DEATHS ACCORDING TO TYPE OF ORGANISM.

Age-Groups.	Type I.	Type II.	Type III.	Group IV.	Totals.
5-15 Cases, ...	59	31	6	46	142
Percentage of Age-Group,	41.6	21.8	4.2	32.4	100.
Deaths, ...	1	1	—	—	2
Mortality per cent., ...	1.7	3.2	—	—	1.4
15-25 Cases, ...	111	123	6	69	309
Percentage of Age-Group,	35.9	39.8	1.9	22.4	100
Deaths, ...	4	9	2	4	19
Mortality per cent., ...	3.6	7.3	33.3	5.8	6.1
25-35 Cases, ...	93	73	7	35	208
Percentage of Age-Group,	44.7	35.1	3.4	16.8	100
Deaths, ...	10	18	2	2	32
Mortality per cent., ...	10.7	24.7	28.6	5.7	15.4
35-45 Cases, ...	72	77	5	22	176
Percentage of Age-Group,	40.9	43.8	2.8	12.5	100
Deaths, ...	14	24	4	4	46
Mortality per cent., ...	19.4	31.2	80	18.2	26.1
45+ Cases, ...	37	49	14	42	142
Percentage of Age-Group,	26.1	34.5	9.9	29.5	100
Deaths, ...	12	21	9	8	50
Mortality per cent., ...	32.4	42.9	64.3	19	35.2

Note.—Series 2 not included. Table includes the serum-treated cases.

Whatever the infecting organism, the mortality increases rapidly with age. At ages from 5 to 15 pneumonia has a negligible mortality, at 15-25 the fatality is small, at 6 per cent., at 25-35 it is 15 per cent., at 35-45 it reaches 26 per cent., and is highly fatal at later ages. Type II infections have a slightly greater predilection for older persons, while, generally speaking, they are about twice as fatal as those of type I. Type III has a low incidence, is more common in later

years, but is the most severe infection of all. Group IV infections occurred more frequently at ages under 15 and over 45, and were the least serious, being less fatal than type I at all age-groups except between 15-25 years. The rapid increase of fatality with age is a striking feature, and raises a number of important epidemiological issues. To what extent does this depend on predisposing causes such as the general state of health, the vague condition implied in the term "constitution"? Do certain occupations provide greater opportunities for infection? What is the relationship between age and heightened susceptibility during the early months of the year? Does age-incidence differ as between more northerly and more southerly parts of the country, and what is the influence of climatic conditions? Is an attack of pneumonia preceded by some recognisable alteration in the state of health of the individual? These are etiological problems which bacteriological and biochemical investigation, combined with field studies, may assist in solving.

General Considerations.—The bacteriological investigations show that the winter epidemic prevalence of lobar pneumonia is associated with increased activity of the first two types of pneumococci. These types tend to maintain their own degree of virulence. The epidemiological picture of the disease, while it may be influenced to some extent by variation in the relative prevalence of these types, is probably even more dependent upon the greatly enhanced susceptibility to infection as age advances and upon the influence of environment in determining the age-incidence and severity of the disease. The results obtained suggest these broad generalisations; they are, of course, subject to the limitation that they cover the short period of three years and are not sufficiently extensive to enable a more minute examination to be made of the precise function assumed by the types of pneumococci in relation to the prevalence and severity of lobar pneumonia at different periods of the year. The question, however, arises does the further elucidation of the epidemiology of the disease resolve itself into a separate study of the intimate behaviour of each of these types and even of the numerous components of group IV, on the basis that the known serological types at any rate are stabilised and unalterable? Discussion sometimes proceeds on this assumption, but it is impossible to disregard the significant fact established by F. Griffith¹⁰ that transmutation of type does occur under experimental conditions, or to ignore the possibility that the same conversion may also take place in the human body, although it must be admitted that this has not so far been proved. It would seem to be necessary, therefore, to reserve judgment and to exercise caution in attributing to types I and II a paramount importance in the spread of pneumonia until this and other questions are definitely answered. Again, are these serological types specific in a strictly genetic sense, i.e., does the implantation of type I or II pneumococci into a respiratory tract previously free from them, and the resulting development of lobar pneumonia in consequence, represent the correct sequence of events? Answers to these questions would add an important contribution to knowledge of the epidemiology of the disease.

Transmission of Infection.—Certain of the investigations in Glasgow have been directed to this problem. As regards the predominating types I and II, two sets of observations may be mentioned: (1) These organisms may persist during and long after convalescence, though as a general rule they tend to disappear and to be replaced by a group IV strain (Griffith¹¹). Cruickshank and Montgomery¹² found, in 250 cases examined at varying periods after the crisis, that 61 per cent. were positive up to four days, 50 per cent. up to 16 days, and 35 per cent. up to 24 days. The duration of persistence may be much longer, however, since these observers found that the organism was, in fact, recoverable 6 to 12 months later in 12.15 per cent. of the cases. Christie¹³ found that 24 per cent. of his patients were positive on discharge from hospital. The carrier conditions may thus become well established. (2) Contacts with patients in the same hospital ward, whether other patients or nurses in attendance, are liable to harbour these pneumococci in the respiratory passages. For instance, Cruickshank and Montgomery¹⁴ obtained positive results in 18 per cent. of 189 contact nurses and in 17 per cent. of 156 contact patients. Christie found 13 positive in a series

of 80 examinations of contact nurses; the duration of infection was evidently transient, as a persistent positive result was obtained in only one of these ward contacts. Out of 148 examinations of nurses in the same hospital, but not in pneumonia wards, the results were negative for types I and II, although organisms of group IV were present in 40-60 per cent. and type III in 6 per cent. This corroborates the American results among contacts of Avery, Chickering, Cole, and Dochez (1917), and as more recently reported by Heffron.¹⁵ The former also found that the room dust of wards in which pneumonia patients were being nursed contained type I and II organisms in over 30 per cent. of samples examined.

Accordingly, the general experience is that organisms of type III, and, to a much greater extent, of group IV, are commonly present in the nasopharynx of healthy persons, whereas those of types I and II seldom occur except in those convalescent from an attack of pneumonia, or in contact with pneumonia patients. On theoretical grounds, therefore, it is inferred that the occurrence of the pneumonias of group IV are explicable on the basis of auto-infection, and that those of types I and II are spread directly or by carriers. It is impossible, however, at this stage of investigation, to say what epidemiological significance attaches to the carrier condition, because (a) nurse contacts rarely contract the disease and as rarely appear to infect their colleagues in hospital; (b) convalescent carriers discharged from hospital do not give rise to "return" cases; and (c) pneumonia wards where patients are concentrated do not appear, as a rule, to act as disseminators of infection, although certain striking exceptions to this have been recorded in the form of highly infectious institutional outbreaks. It may be concluded that there is a wide susceptibility to the carrier state, but a low susceptibility to the disease itself. These features resemble, though more obscurely, those associated with the meningococcus. It is possible, however, that field studies accurately conducted may show that direct contact plays a more definite part in the spread of lobar pneumonia than is generally supposed. Several instances of this have been collected by Cruickshank and Montgomery.

Epidemiology of the Acute Pneumonias.—The hospital data given above suggest that lobar pneumonia has a wave of increased incidence during the early months of the year. Is it possible to separate lobar pneumonia from the mass of pneumoniatic affections in the population with sufficient accuracy to enable some idea of its epidemiological characters to be obtained? How far do such vital statistics as are available enable the behaviour of lobar and broncho-pneumonia to be contrasted? This is an extremely difficult problem for many obvious reasons. The pneumonias are a highly composite group. Apart from the fact that the respiratory affections which are notifiable under the generic term "acute primary pneumonia" include both lobar and broncho-pneumonia, difficulties of diagnosis between broncho-pneumonia and acute bronchitis, and the secondary pneumonias in young children and the aged, render accurate studies impossible. Even if all cases were faithfully notified* these difficulties would remain. Although notification data lose most of their value for detailed study because of their incompleteness and liability to error, they serve the purpose of revealing the general mass movement of these acute diseases of the lungs. For instance, in the statistical picture of winter incidence based on notifications, those referable to younger children, and in a less degree to the aged, may be taken to represent the movement of acute broncho-pneumonia, while pneumonia in the intermediate ages may be regarded, in the absence of influenza, as mostly lobar in type.

As regards death certification, it has been a growing practice for medical practitioners to distinguish between the pneumonias in completing the death certificate. In this respect a distinct advance has recently been made. The International Classification of Causes of Death, which came into operation throughout the country in January, 1931, makes provision for discarding the use of the term "pneumonia," which is listed as an "indefinite" and "undesirable" term to be avoided in the certificate, the further information asked by the Registrar-General, if available, now being—Was the case one of lobar

* Probably not less than 76 per cent. of acute pneumonias are notified in Glasgow.—C. M. Smith, *Journal of Hygiene*, April, 1926.

or of broncho-pneumonia? This insistence on better classification of the cause of death should in time assist in distinguishing the fatal lung infections more accurately than has hitherto been possible, and enable such etiological factors as age and sex-incidence in different localities to be ascertained.

These difficulties impose a considerable barrier to an accurate study of the epidemiology of the acute pneumonias. As regards their incidence, the only material available is furnished by the general volume of notified cases, which, of course embraces pneumonia of all kinds. It is possible, however, to differentiate roughly between lobar and broncho-pneumonia on the basis of death certification. The extent to which these conditions are separable in practice for statistical purposes is shown in table IV, which gives for 1931 the deaths certified as broncho-pneumonia and as lobar pneumonia, along with those "not otherwise defined."

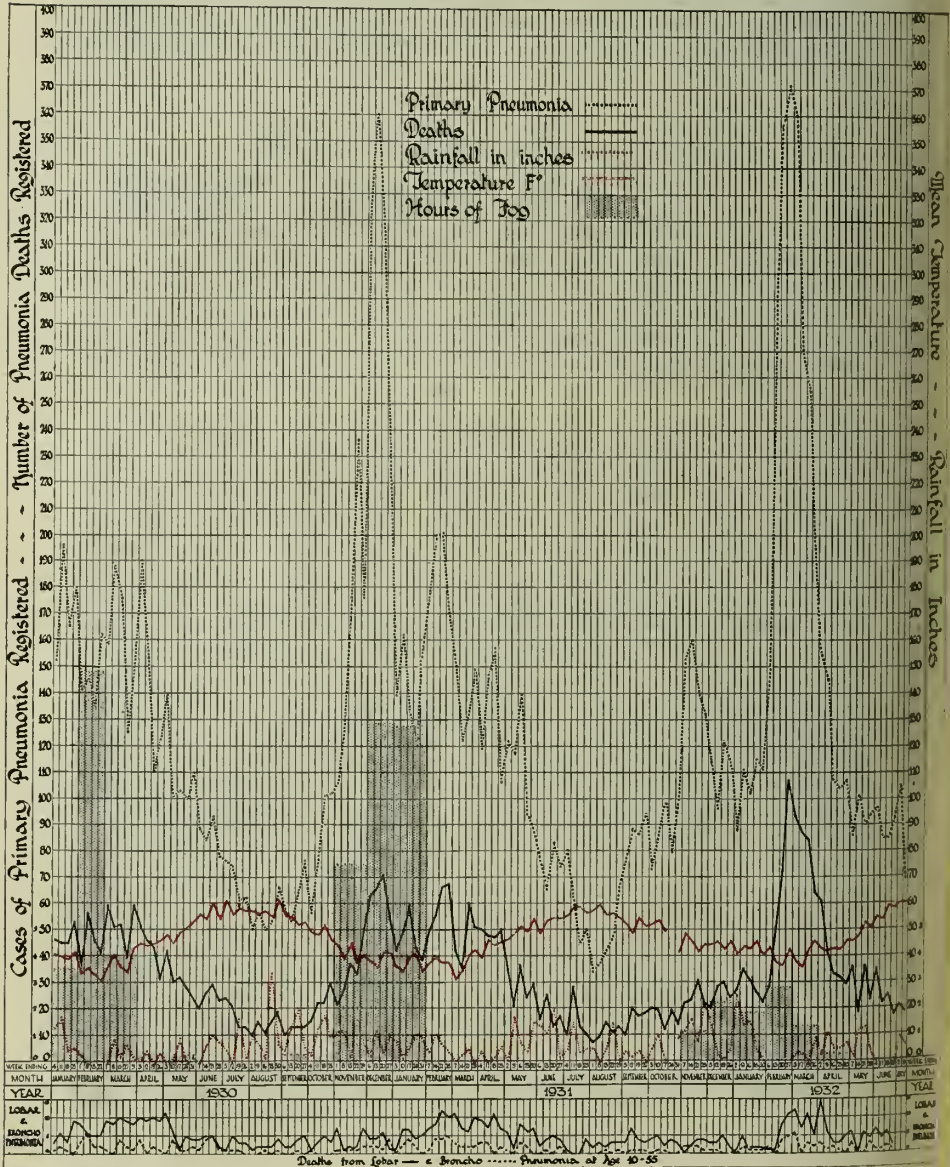
TABLE IV.
GLASGOW.—DEATHS FROM PNEUMONIA, 1931.

	Broncho-Pneumonia.			Lobar -Pneumonia.			Pneumonia (not otherwise defined).		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
-1 year, ...	216	106	322	10	10	20	43	28	71
-2 years, ...	123	87	210	4	3	7	22	11	33
-5 „ ...	45	36	81	5	5	10	14	8	22
-10 „ ...	13	13	26	7	1	8	2	4	6
-15 „ ...	1	—	1	6	3	9	3	2	5
-20 „ ...	4	1	5	10	2	12	1	—	1
-25 „ ...	1	—	1	10	4	14	3	1	4
-35 „ ...	6	7	13	39	12	51	6	4	10
-45 „ ...	9	11	20	63	23	86	9	9	18
-55 „ ...	12	11	23	67	14	81	11	7	18
-65 „ ...	20	11	31	51	20	71	17	14	31
-75 „ ...	24	38	62	34	20	54	18	10	28
+75 „ ...	15	29	44	6	7	13	2	9	11
Totals, ...	489	350	839	312	124	436	151	107	258

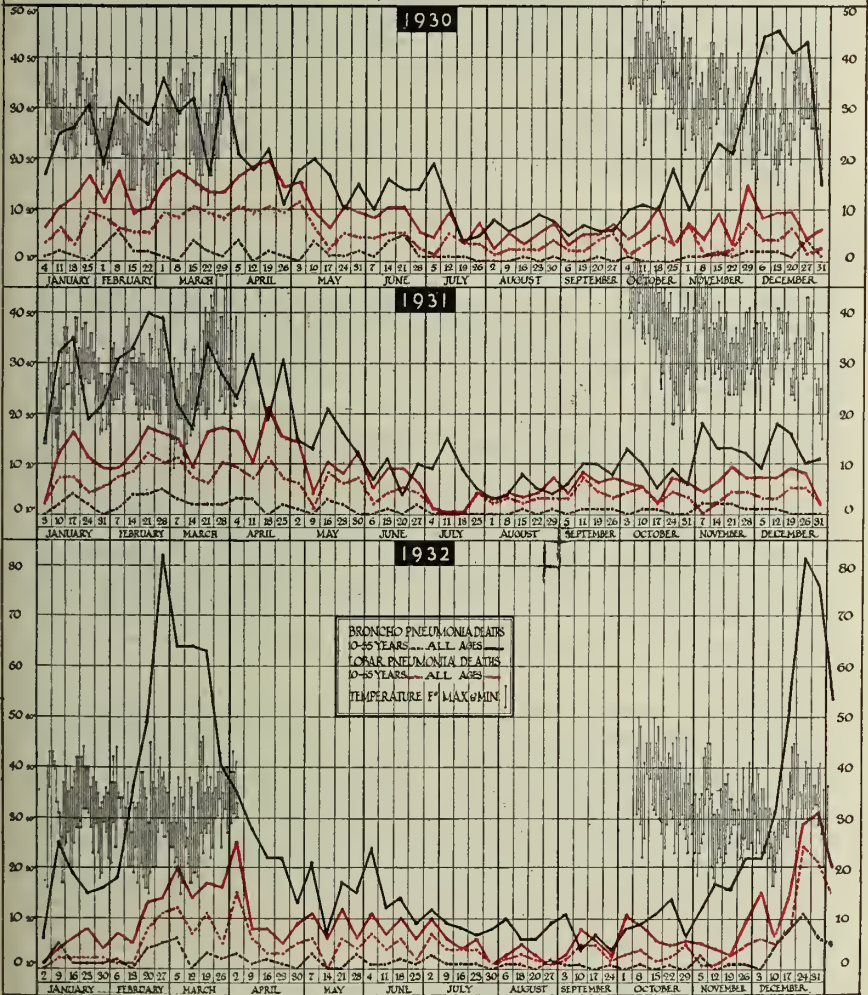
It will be observed that broncho-pneumonia is, in the main, an affection of the very young and the very old, and is relatively uncommon as a cause of death at intermediate ages, and that most of the undefined pneumonias refer, as might be expected, to the extremes of life. Between the ages of 10 and 55 undefined pneumonia creates least confusion. For instance, between these ages there occurred 253 deaths from lobar pneumonia, 63 from broncho-pneumonia, and 56 undefined, a figure which forms 15 per cent. of the total deaths at these ages. It is clear that death certification is not yet very accurate, but an attempt has been made to obtain some idea of the seasonal incidence of deaths from lobar pneumonia as contrasted with broncho-pneumonia by using the data referable to the age-group 10-55, where there is least dubiety as to the cause of death. The available material by which the behaviour of these two affections may be contrasted is set out in chart I on page , which has been constructed to show for the period January, 1930, to June, 1932, the general mass movement in weeks of the notified pneumonias, along with the recorded deaths. Graphs are included showing the course of the weekly mean temperature and the weekly rainfall in Glasgow. The lower part of the chart shows the deaths certified from week to week as lobar and broncho-pneumonia between the ages of 10 to 55 years. This attempt to dissociate these two affections reveals quite definite differences in the seasonal course of the respective curves of the deaths throughout the period studied.

CLASCOW : PNEUMONIA 1930-1932.

Diagram showing weekly No. of (1) Cases of Primary Pneumonia Registered (2) Deaths (3) Temperature F° (4) Rainfall in Inches (5) Hours of Fog.



GLASGOW
DEATHS FROM LOBAR & BRONCHO PNEUMONIA
10-55 YEARS & OTHER AGES
ALSO TEMPERATURE (F°) FOR 1ST QUARTER 1930-32



Incidence of Pneumonia as a Whole.—The incidence of the pneumonias as a whole is at its lowest in August and September. The highest points occur between November and April, and during this period high epidemic prevalence may be reached either before or after the end of the calendar year. In fact, the acute respiratory experience of the city differed in each of the three years under review. In 1929-30 the winter prevalence took the form of a sustained fluctuating curve falling gradually from April to July. (The relative portion of the chart for 1929 has been omitted.) The curve remained unaffected during a period of cold, foggy, dry weather in February. In 1930-31 an abrupt ascent took place in the middle of November, reaching epidemic proportions (320 to 360 notifications and 60 to 70 deaths per week) during the first three weeks of December. This incident coincided with a falling mean temperature associated with intermittent foggy weather and variable rainfall. A secondary peak occurred towards the end of February. In 1931-32 the salient feature was the onset of a sudden explosive incidence lasting for ten weeks from the end of February to the beginning of April. In each of the three weeks ending February 20th and 27th and March 5th there occurred 360 to 370 cases and 90 to 100 deaths. This episode coincided with the lowest mean temperatures of the year and an absence of rain or fog, i.e., during the cold, dry, clear weather of February.

Incidence of Lobar Pneumonia.—Taking the curve in the lower portion of the chart, which represents deaths from lobar pneumonia between 10 and 55 years of age, it will be observed that the weekly incidence of deaths proceeds throughout the year in a manner which betrays little relationship to the much more decisive and steep fluctuations of acute broncho-pneumonia. For instance, during the period of high epidemic prevalence in November-December, 1930, which was due to broncho-pneumonia, there was no corresponding movement of lobar pneumonia, the latter remaining little affected. Again, during the similar high incidence of cases and deaths in February, 1932, lobar pneumonia, although prevalent, was comparatively mild in character. In each of the three years a definite rise in the incidence of the deaths from lobar pneumonia took place in the early months of the year, in particular during those of February-April, and there was little tendency to fluctuate at other periods. To make these points clearer a second chart (No. II) has been prepared to show the contrast between broncho-pneumonia and lobar pneumonia (*a*) at all ages, and (*b*) at ages between 10 and 55 years. These curves indicate that during the period studied, lobar pneumonia has tended to pursue a regular and undeviating seasonal course, scarcely at all influenced by such conditions as have caused broncho-pneumonia to exhibit irregular and wide fluctuations. This attempt to dissociate the incidence of lobar pneumonia from that of broncho-pneumonia is, of course, based on rather imperfect data, but permits of the suggestion that lobar pneumonia has distinct epidemiological characters of its own.

Relation of Broncho-pneumonia to Weather Conditions.—The weekly mean temperatures have been inserted in chart I and the daily maxima and minima in chart II for the first three months of each year. These graphs indicate, in a general way, that the pneumonias as a whole tend to rise in incidence as the mean temperature falls, especially when it descends below 40°F. It is not, of course, possible from these data to make a critical study of the weather conditions which promote pneumonia. This has been investigated very fully in Glasgow by Matthew Young,¹⁶ as regards the acute lung affections in children under five years of age, using the combined statistics of 54 years from 1857 to 1910. Keeping in mind the fact that what is now called broncho-pneumonia was commonly certified as bronchitis in former years, he preferred to group the statistics for the two diseases combined as affording the more accurate data for mathematical correlation. His conclusions were that a definite inverse relationship exists between the mortality from respiratory disease, or bronchitis and pneumonia summed together, and the mean temperature, especially that of the preceding week. The mortalities from bronchitis and pneumonia in children are not influenced in any consistent manner or degree by the amount of rainfall. His separate studies as regards children under five in London, Glasgow, Edinburgh, Aberdeen, and Dundee yielded similar results.

While low mean temperatures and high mortality in acute respiratory disease in young children may be accepted as being definitely related, the incidence of the deaths from the pneumonias as a whole during the three years, as shown by the charts, cannot be explained entirely on this basis. The very dissimilar movements of broncho-pneumonia were not accompanied by equally dissimilar variations in the course of the mean temperature. It may be found on more critical and detailed examination that broncho-pneumonia is highly sensitive to finer diurnal temperature variations. Some such association is hinted at in chart II (where the daily maximum and minimum temperatures are plotted out) as regards the first three months of 1930 and 1931. On the other hand, the epidemic curve of broncho-pneumonia during the same period of 1932 much exceeds what might have been expected if the influence of temperature had been alone responsible. It is more probable that some unknown epidemiological factor, other than weather conditions alone, comes into play in determining the incidence of broncho-pneumonia from year to year.

The total pneumonia curve comprises two distinct components, the one the curve of broncho-pneumonia, which pursues an erratic course, rising and falling at irregular periods; the other the curve of lobar pneumonia, which shows an orderly progress, rising early in the year and remaining high till April, thereafter persisting at a lower level for the remainder of the year.

SUMMARY.

(1) The incidence of the various types of pneumococci in lobar pneumonia has been ascertained during the past three years in 1,077 hospital patients. Pneumococci of type I were present in 38 per cent., type II in 36 per cent., type III in 4 per cent., and group IV in 22 per cent. These figures are much the same as those found elsewhere in this country, except that type II is higher than the general average.

(2) The case mortalities were: type I, 10.7 per cent.; type II, 19.6 per cent.; type III, 42.9 per cent.; and group IV, 8.4 per cent.; the total mortality being 14.7 per cent. This also is in accord with the general experience. Whatever the infecting organism, the case-mortality rises rapidly with age, while type II is almost twice as fatal as type I at all ages. Group IV infections are least serious, and occur most frequently in the young and the old. Type III is more common in later years, and is the most severe infection of all. The age of the patient is the most important factor in mortality, a feature which raises a number of epidemiological questions not yet settled.

(3) Case-mortality varies considerably at different periods of the year and also when the same periods of successive years are compared. How much of these differences may be due to change in type-incidence and how much to altered age-incidence are points still to be determined. Alterations in type frequency to the extent noted elsewhere have not been observed.

(4) The more severe type II infections were less prevalent during the winter of 1931-32, but the data are insufficient to enable a minute estimation to be made of the precise function assumed by types I and II in relation to the seasonal prevalence and severity of lobar pneumonia. What epidemiological significance is to be attached to these types? It is doubtful whether the known serological types are to be regarded as stabilised and unalterable, in view of the experimental evidence that transmutation of type does occur. The possibility that this may also take place as regards human infection suggests caution in attributing to types I and II a paramount importance in the spread of pneumonia.

(5) As regards transmission of infection, the results obtained corroborate those of other observers. Pneumococci may persist in the nasopharynx of convalescent patients for long periods. They are also readily found in nurse and patient contacts in hospital wards. The carrier condition is thus readily established. On the other hand, there is little evidence of direct infection by carrier patients or by contacts. It may be concluded that there is a wide susceptibility to the carrier state and a low susceptibility to the disease itself.

(6) The epidemiology of the pneumonias as a whole is discussed and a comparison made between the behaviour of lobar pneumonia and broncho-pneumonia in so far as the available data permit. It would appear that lobar pneumonia shows a periodic peak seasonal incidence from February to April, remaining at a lower level during the rest of the year, while broncho-pneumonia tends to pursue an erratic course and to exhibit irregular and wide fluctuations. This attempt to dissociate the incidence of lobar pneumonia from that of broncho-pneumonia is, of course, based on rather imperfect data, but permits of the suggestion that lobar pneumonia has distinct epidemiological characters of its own.

This description of pneumonia in Glasgow is based on the work of others, whose generous contributions to it are mentioned in the text. I am, in addition, indebted to Dr. John M. Cowan, Dr. Robert Cruickshank, and Professor C. H. Browning for their advice and assistance. Acknowledgment is also due to Dr. Thomas Archibald, Dr. William Elliott, and Dr. William Dow, the superintendents of the fever hospitals, for analyses of hospital data, and to Mr. William M'Kean, on the epidemiological side.

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INFLUENZA EPIDEMIC, DECEMBER, 1932.

The following is a report on the influenza epidemic of December, 1932, as it affected the city:—

The presence of influenza became noticeable in general medical practice in the city early in December, although mild catarrhal affections with or without general symptoms had previously been prevalent following upon the cold foggy weather at the beginning of November. Notifications of influenzal pneumonia began to be added to the usual winter increase of acute primary pneumonia at the beginning of December. The table given below shows that 14 such notifications, along with 8 deaths, were recorded during the week ending 3rd December; 23 notifications and 7 deaths during the week ending 10th; 42 notifications and 28 deaths during the week ending 17th; 117 notifications (the highest figure reached) and 83 deaths during the week ending 24th; 114 notifications and 86 deaths (the highest figure reached) during the week ending 31st December. The period of maximum prevalence thus lasted for about a fortnight—the last fortnight of the year—after which the epidemic rapidly declined.

The general death-rate moved in association with the influenza epidemic, the first definite rise (to 18·2) taking place during the week ending 10th December. The maximum death-rate of 28·7 was reached during the week ending 24th December. It may, therefore, be concluded from the evidence of the vital statistics that the epidemic commenced at the beginning of December and reached its maximum prevalence during the weeks ending 24th and 31st December. The fall was rapid, although latterly it tended to taper off gradually and to merge into a period of increase of respiratory affections generally during the cold spell which commenced during the third and extended into the fourth week in January.

The following table shows the weekly behaviour of the general death-rate, the deaths from the acute pneumonias, influenza, and influenzal pneumonia, the notifications of influenzal and acute primary pneumonia, and the deaths of children under five years of age from acute pneumonia (all forms):—

GLASGOW.—VITAL STATISTICS DURING INFLUENZA EPIDEMIC.

	November.				December.					January.			
	5	12	19	26	3	10	17	24	31	7	14	21	28
General Death Rate, ...	12·4	14·9	15·2	14·9	14·6	18·2	20·0	28·7	27·3	19·4	18·4	18·0	18·0
Deaths from—													
Lobar Pneumonia, ...	5	4	3	9	15	7	14	29	31	20	11	9	4
Broncho-Pneumonia, ...	12	17	16	23	22	33	54	80	76	54	43	35	37
Other forms of Pneumonia, ...	4	4	6	2	4	1	6	21	14	5	7	1	3
Bronchitis, ...	9	19	18	9	11	18	34	34	32	26	12	21	19
Influenza and Inf. Pneumonia, ...	3	1	5	4	8	7	28	83	86	38	32	25	11
Notifications—													
Inf. Pneumonia, ...	6	5	6	8	14	23	42	117	114	48	57	23	21
Acute Primary Pneu., ...	91	129	157	196	191	215	323	482	443	255	199	174	169
Deaths of Children under five years of age from pneumonia (all forms),	10	14	15	19	23	23	42	67	64	43	42	27	31

The incidence of influenza in the city fell far short of the experience of January, 1929, when the death-rate rose to 50 per thousand of the population. The statistics of sickness for the Police Force show that the outbreak began to affect the staff about 6th December. The highest number invalided was 217 during the week ending 25th December, equal to about 10 per cent. of the total Force. This figure, however, represents the total invalidity among the Force from all causes. The actual figures are given below. The experience of the Tramway Department was very similar, the invalidity figures being from 8 to 9 per cent. on each day between 16th and 24th December. About 10 per cent. of sickness on any one day was the usual

experience among staffs in the city, although there were instances of much higher local incidence:—

GLASGOW POLICE FORCE.—INCIDENCE OF SICKNESS.

	November.				December.				January.		
	6	13	20	27	4	11	18	25	1	8	15
Number off duty each week (all causes), ...	9	18	27	25	23	31	164	217	161	93	72

As regards absentees from school, the figure for scholars on 23rd December was 15 per cent., as compared with the ordinary figure of 5·5 per cent. The corresponding figures for teachers were 5 per cent. and 1·5 per cent. respectively.

Influenza was introduced among hospital staffs a few days earlier, and in one case the staff became affected during the last week of November, although curiously enough the hospital staffs did not suffer to the same extent as the outside population, with the exception of one large general hospital, where the figure reached about 10 per cent.

The prevailing type of influenza was, on the whole, of sharp onset and short duration, ushered in with shivering and fever, followed by headache and joint pains, and lasting for two or three days. In a considerable proportion of cases, the acute symptoms tended to be followed by persistent cough and debility. The gastric type was not in evidence.

It will be observed that deaths certified as lobar pneumonia increased to a maximum of 31 during the week ending 31st December, and that those certified as broncho-pneumonia increased to 80 during the week ending 24th December. The influenza epidemic apparently, therefore, caused an increased incidence of acute lobar pneumonia at a time when this affection does not usually prevail to anything like the same extent. Among 49 cases admitted to one of the hospital wards between 15th December and 7th January, 30 were diagnosed as lobar pneumonia, 10 as broncho-pneumonia, and 9 as influenzal pneumonia. 17 of these were fatal, giving a mortality rate of 35 per cent., as against a pre-influenzal mortality rate in the same ward of about 15 per cent.

The epidemic created great pressure on hospital accommodation for pneumonia, and, during its height at the end of December, there were 520 beds occupied by pneumonia patients in the infectious disease hospitals, approximately 120 in the municipal general hospitals, while 450 were under treatment at home. The home visiting of all notified cases of acute primary pneumonia and acute influenzal pneumonia was undertaken by

the health visitor nursing staff of the Department, a service which was found to be of great value. Admission to hospital was based on their reports on the home circumstances, as was also the possibility of home treatment. In the event of the latter being feasible, the management of a patient at home was supervised by this staff. In spite of this, however, the establishment of a waiting list of urgent cases for admission to hospital became inevitable during the month of December, reaching 54 by the 20th of the month.

It may be remarked that the distribution of serological types of pneumococci in the lobar pneumonias was investigated by Dr. Ian Christie at Knightswood Fever Hospital. His conclusions were:—(1) In a series of 90 cases of acute pneumonia admitted to hospital during the influenza epidemic in Glasgow, 60 were lobar and 30 influenzal pneumonia. (2) The distribution of types in the lobar pneumonias showed an altered frequency percentage of 23·3, 53·3, 11·7, and 11·7 as regards Types I, II, III, and Group IV, as compared with the standard for the city, namely, 38·1, 36·0, 3·9, and 22·0. (3) The incidence of lobar pneumonia during the epidemic was unusually high for the time of the year, its period of maximum prevalence being the months of February, March, and April. (4) The Type II pneumococcus displayed a much exalted virulence, and was responsible for a case-mortality of 37·5 per cent. (5) Type III infections occurred in elderly people already weakened by concurrent influenza.

PULMONARY TUBERCULOSIS.

Morbidity Statistics.—The number of cases of pulmonary tuberculosis registered during the year was 1,722, as compared with 1,702 in 1931. Since 1923 the number of cases notified each year has remained almost constant. The following table gives the age-distribution of cases registered in 1932:—

		-5	-10	-15	-20	-25	-35	-45	-55	-65	+65
M.,	...	25	40	37	125	128	194	173	143	83	20
F.,	...	29	38	50	138	125	180	101	49	33	11
		54	78	87	263	253	374	274	192	116	31

During the past 10 years there has been a change in the age-distribution of pulmonary tuberculosis. An average rate per 1,000 living in 3 age-groups has been calculated for the 3 years, 1920-1922 and for the 3 years 1930-1932. The results show that there is an increase of 13·5 per cent. in the rate of incidence per 1,000 persons living for females at ages 15 to 25 years, and of 2·3 per cent. for males in the same age-group. There is a reduction in the incidence-rate amounting to 25 per cent. in males over 25 years. In males of less than 15 years of age

the reduction is as much as 36 per cent. The following table gives the actual rates per 100,000, with percentage decrease:—

VARIATION IN AGE-INCIDENCE OF CASES NOTIFIED DURING
THE PAST 10 YEARS.

INCIDENCE PER 100,000 AT EACH AGE-GROUP.

	-15		15-25		+25	
	M.	F.	M.	F.	M.	F.
Average Rates for three years round						
1921, ...	109	117	257	229	280	165
Average Rates for three years round						
1931, ...	70	78	263	260	210	120
Percentage Difference, ...	-35.8	-33.3	+2.3	+13.5	-25	-27.3

Of the total cases which were registered, 1,580 were notified under the Tuberculosis Regulations, and 67.6 per cent. of these were notified by private practitioners. The proportion of cases who were notified only at death or regarding whom information was obtained through the Registrar is often taken as an index of the completeness of notification in a district. In 1932, 135 cases came under these categories, an equivalent of 8.5 per cent. of all cases registered.

The total number of persons suffering from pulmonary tuberculosis on the registers of the dispensaries at the end of the year was 5,936, of whom 1,396 were in the age-period 15-25 years, which has been emphasised as being so important in this disease. Of these 5,936 cases, 44.2 per cent. have been confirmed by the finding of tubercle bacilli in the sputum.

Stage of Disease at Notification.—The duration of illness of patients before coming to the dispensaries was investigated in 1931, and the results showed that in about 65 per cent. of cases less than 6 months had elapsed between the apparent onset of the disease and the first attendance at the dispensary. In the special age-group 15-25 years the percentage was practically the same. Similar information was taken out regarding the deaths which occurred during 1931, and it was found that the proportion of patients in whom disease had existed for less than 6 months prior to registration was 60 per cent., a figure near enough to that quoted above with regard to new cases to be taken as confirmatory. In the remaining 30-40 per cent. there is therefore a considerable delay in notification. Only 208 out of 995 cases investigated, that is 21 per cent., came under surveillance within 2 months of sickening. These periods of delay, especially in regard to the young adult group upon which stress has already been laid, are still too great, and in many instances make all the difference between the possibility or otherwise of successful therapy.

Mortality Statistics.—The death-rates from pulmonary tuberculosis in Glasgow since 1881 and the phthisis death-rates per 100,000 in certain towns are shown in the following tables:—

GLASGOW.—DEATH-RATES FROM PULMONARY TUBERCULOSIS.

1881-1890, ...	2·680 per 1,000	1925, ...	0·943 per 1,000
1891-1900, ...	2·015 "	1926, ...	0·876 "
1901-1910, ...	1·533 "	1927, ...	0·869 "
1911-1915, ...	1·346 "	1928, ...	0·876 "
1916-1920, ...	1·191 "	1929, ...	0·941 "
1921, ...	1·007 "	1930, ...	0·805 "
1922, ...	0·946 "	1931, ...	0·865 "
1923, ...	1·029 "	1932, ...	0·890 "
1924, ...	1·026 "		

PHTHISIS DEATH-RATES PER 100,000 IN CERTAIN TOWNS.

	1913.	1920.	1925.	1930.	1931.	1932.
Glasgow, ...	143	106	94	81	87	89
Edinburgh, ...	114	85	95	80	70	70
Dundee, ...	116	99	87	76	73	61
Aberdeen, ...	109	93	97	51	69	46
London, ...	—	106	95	87	90	82
Liverpool, ...	—	141	130	123	115	112
Manchester, ...	—	133	131	115	112	100
Birmingham, ...	—	95	98	90	91	83

During 1932 there were 974 deaths from pulmonary tuberculosis, as compared with 941 in 1931. It appears that there is in Glasgow a distinct interruption in the downward trend of these death-rates. In certain of the other towns included in the table there appears to be a similar experience. On reviewing the trend of the tuberculosis death-rates since 1875, it is noticed that there have been periods of a few years where the decline appeared to have been arrested, so that the present experience does not necessarily mean that no further fall will take place.

Of the total number of deaths from pulmonary tuberculosis during the year, 578, or 59·3 per cent., died in institutions.

Tuberculosis Administration.—The attendances at the various dispensaries during the year amounted to 3,015 primary and 59,813 subsequent attendances. This shows a slight increase as compared with 1931. An increasing number of cases are being referred for consultation at the dispensaries prior to notification, which is a satisfactory development, and, among other things, has the result of preventing unnecessary notification of cases who may be found later not to be suffering from tuberculosis.

The number of domiciliary visits paid by the tuberculosis health visitors was 52,138. During the winter the nursing staff attached to dispensaries was also called upon to assist in the visitation of cases of pneumonia who were being treated at home, and, while this was in addition to their ordinary duties, the amount of such work during 1932 was not unduly heavy.

Attention has been given to the question of the housing of tuberculous persons and their families. This aspect of administration is one which should be productive of valuable results. The Corporation in 1929 decided to reserve 10 per cent. of the "intermediate" scheme houses for phthisical persons and their families, provided the other qualifications for occupancy of these houses were satisfied. This year a further regulation has been made, namely, the Housing Director has been instructed to give priority to families in which there is a tuberculous case when arranging for the re-letting of slum-clearance houses which have fallen vacant. Up to the end of the year 315 persons have been rehoused under the first of these schemes, and investigations are in progress with a view to putting into operation the second recommendation. While the spacing out of the population, especially those who are associated with cases of phthisis, in better houses is a highly desirable expedient, it should not be forgotten that nutrition also plays a considerable part in determining the susceptibility of an individual to the disease, so that if the general level of nutrition becomes lowered, this may serve to annul any advantage gained by improving housing conditions.

Of the cases notified during 1932, 57 per cent. came from houses of one and two apartments, and from the census it is found that 55·4 per cent. of the population live in these small houses. There are, however, relatively fewer adults in one and two-apartment houses than in larger houses, so that although the proportion of cases is roughly equal to the proportion of the population, nevertheless, after correction for age and sex, it is found that the incidence of pulmonary tuberculosis in these houses is about double the rate in houses of four and more apartments.

Institutional Provision.—Hitherto the institutional provision made in Glasgow for tuberculosis has been shown under the headings of the reports of the various hospitals and also in the tables at the end of the report of the Medical Officer of Health. It may be desirable to show how the accommodation is utilised. Fairly extensive hospital provision is made, the total number of beds in Corporation institutions available for pulmonary disease being as follows:—

Ruchill Hospital, ...	...	...	...	272	
Robroyston Hospital, ...	...	...	...	168	
Knightswood Hospital, ...	...	...	...	72	
Bellefield Sanatorium, ...	...	...	...	110	(Female Cases only).
Mearns Kirk Hospital, ...	...	...	...	20	
				642	

Pulmonary tuberculosis is also treated at Bridge of Weir Sanatorium, in which some 70-80 beds are occupied by Glasgow cases, and in Ochil Hills Sanatorium, where there are about 60 Glasgow cases. A few patients are accommodated also in Lanfine Home, Kirkintilloch, and in Darnley Joint-Fever Hospital. About 100 beds in the Corporation General Hospitals are usually occupied by cases of this disease. It may be stated in round numbers that there are 850 beds available in Glasgow for the treatment and segregation of pulmonary tuberculosis. The ideal method of dealing with a case is to admit in the first instance to one of the hospitals within the city, Ruchill or Robroyston. After a period of rest the patient may, if found suitable, be transferred to finish off his treatment and to complete his cure in one of the sanatoria, Bellefield, Bridge of Weir, or Ochil Hills.

The following table shows admissions to institutions of patients suffering from pulmonary and non-pulmonary tuberculosis since 1922:—

Year.			Local Authority Hospitals.	Sanatoria.	General Hospitals.	Total.
1922,	...	...	2,018	714	604	3,336
1923,	...	...	1,959	690	555	3,204
1924,	...	...	1,840	499	573	2,912
1925,	...	...	1,531	457	606	2,594
1926,	...	...	1,637	425	738	2,800
1927,	...	...	1,458	413	615	2,486
1928,	...	...	1,429	418	819	2,666
1929,	...	...	1,501	494	753	2,748
1930,	...	...	1,762	608	549	2,919
1931,	...	...	2,188	477	289	2,954
1932,	...	...	1,981	457	411	2,849

Collapse Therapy.—Increasing attention is being given yearly to treatment by artificial pneumothorax and other methods of collapse therapy. At present such treatment is given in all the Corporation hospitals with the exception of Knightswood, which only takes advanced cases. Continuation of refills to patients who have had institutional treatment, but who have returned to their homes, is given at Ruchill, Robroyston, and Stobhill Hospitals, and also in a few instances at Baird Street Reception House. It will be necessary in the near future, in order to maintain efficiency in this form of treatment to establish a special station, somewhere near the centre of the town, for the administration of refills.

Non-Pulmonary Tuberculosis. — The incidence of, and mortality from, non-pulmonary tuberculosis continue to fall. Table I shows the numbers of cases of non-pulmonary tuberculosis registered, giving the diagnosis, from 1914.

The reduction in the numbers of cases suffering from tuberculosis of the lymphatic glands and of the bones and joints during these years is especially noteworthy. Scotland has a larger incidence of the non-pulmonary forms of tuberculosis than almost any other civilised country, and the change which has taken place in the distribution and severity of this disease during the past 15-20 years is extremely gratifying. There was a time when the hospital wards in the general hospitals always contained several cases of intractable tuberculosis of bones and joints, with discharging wounds which never seemed to heal. Such cases have become more rare, and it is now the rule that cases of tuberculosis of the spine, hip, or larger bones and joints are admitted to the special hospitals at a sufficiently early stage to enable treatment to be satisfactorily carried out. Occasionally, however, there is some delay, and an abscess is allowed to break down through the surface of the skin, so that a discharging wound is formed, and in the case of spinal disease especially this renders the possibility of ultimate recovery practically hopeless.

The following table shows the age-distribution of non-pulmonary tuberculosis cases registered during each year since 1914:—

TABLE II.
AGE-DISTRIBUTION OF NON-PULMONARY TUBERCULOSIS CASES REGISTERED DURING EACH YEAR
SINCE COMMENCEMENT OF NOTIFICATION ON 1ST JULY, 1914.

Year.	Under 1 year.		1-5 years.		5-10 years.		10-15 years.		Over 15 years.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1914 ..	60	21	132	90	140	102	134	115	165	183	631	511
1915 ..	59	49	236	161	164	140	112	108	192	243	763	701
1916 ..	64	45	244	152	149	123	108	164	225	228	790	712
1917 ..	52	48	190	134	157	156	117	149	242	248	758	735
1918 ..	30	33	163	169	137	125	129	142	208	276	667	745
1919 ..	45	28	151	109	142	123	78	136	201	194	617	590
1920 ..	57	35	143	122	128	137	110	94	181	178	619	566
1921 ..	51	35	157	111	133	122	81	94	181	176	603	538
1922 ..	38	28	175	150	103	87	71	79	155	164	542	508
1923 ..	59	19	214	165	116	112	86	79	192	192	667	567
1924 ..	50	39	212	171	96	99	103	85	177	189	638	583
1925 ..	48	22	184	144	111	103	71	77	170	185	584	531
1926 ..	28	22	162	127	109	88	63	78	167	187	529	502
1927 ..	31	28	171	102	130	82	73	77	195	212	600	501
1928 ..	29	17	152	104	115	112	83	60	180	255	559	548
1929 ..	32	27	132	102	111	95	63	66	160	204	498	494
1930 ..	31	27	145	137	116	124	62	74	161	170	515	532
1931 ..	26	17	126	106	101	97	67	71	171	194	491	485
1932 ..	20	18	130	80	94	78	72	75	176	214	492	465

The reduction in the incidence is most obvious in the younger age-groups.

Institutional Provision.—Institutional treatment for non-pulmonary tuberculosis is available for adults at Robroyston Hospital and for children at Mearnskirk. The total number of beds available is 440 at Mearnskirk and 288 at Robroyston. This apparently generous provision has been necessary on account of the relatively high incidence of the disease in the city and on account of the impossibility of treating cases satisfactorily at home, and also because of the long residence in hospital which is necessary to effect cure or arrest. For example, the average duration of stay in Robroyston of cases of tuberculosis of the spine was 797 days.

During the year the accommodation at Baird Street Reception House (24 beds) was relinquished as being no longer necessary, and the Corporation withdrew their grant to Strathblane Hospital, thereby giving up 10 beds.

The following table shows the death-rate per million of the population from non-pulmonary forms of tuberculosis since 1901, with meningitis and abdominal tuberculosis shown separately:—

GLASGOW.—DEATH-RATE PER MILLION OF THE POPULATION.

Year.	Tuberculous Meningitis.	Abdominal Tuberculosis.	Other Forms.	Total.
1901-1905, ...	319	301	258	878
1906-1910, ...	416	278	255	949
1911-1915, ...	285	197	183	665
1916-1920, ...	210	167	170	547
1921-1925, ...	163	103	122	388
1926, ...	142	69	106	317
1927, ...	148	62	103	313
1928, ...	148	59	110	317
1929, ...	140	64	99	303
1930, ...	182	51	104	336
1931, ...	153	55	110	318
1932, ...	134	46	89	269

BAIRD STREET ACTINOTHERAPY CLINIC.

During the year 1932, 312 patients ceased attending for treatment at the clinic, 257 patients remaining under treatment at the end of the year. Of the 312 patients who ceased attending, 88 have been excluded from the following table, having had less than one month's treatment. The table shows the results of treatment in the remaining 224 patients. Under the column "healed" are included those cases showing exceptional improvement, as well as those firmly healed; under the column "improved" are included those cases in which there was fairly

well marked improvement; and under the column "not improved" are those cases where the improvement, if any, was slight or where there was no improvement.

NON-PULMONARY TUBERCULOSIS.

RESULTS OF LIGHT TREATMENT AT BAIRD STREET CLINIC.

OUT-PATIENTS.						Average Duration of Treatment in Months.		
		Not						
		Healed.	Improved.	Improved.	Total.	Healed.	Improved.	Not Improved
Adenitis,	...	60	38	34	132	10.2	7.4	6.7
Lupus,	...	5	7	12	24	15.4	20.1	4.6
Abdominal Disease,	...	8	4	4	16	13.9	4.3	4.8
Bone and Joint Diseases,	...	3	3	8	14	18	13	11.5
Tuberculosis Cuti,	...	2	1	—	3	9.5	7	—
Dactylitis,	...	4	3	—	7	7.8	6.3	—
Others,	...	3	—	—	3	6	—	—
Miscellaneous,	...	—	—	—	25	—	—	—
		85	56	58	224			

IN-PATIENTS.					Average Duration of Treatment in Months.			
		Not						
		Healed.	Improved.	Improved.	Total.	Healed.	Improved.	Not Improved.
Adenitis, ...	...	5	2	1	8	6.8	9.5	1
Abdominal Disease, ...	...	3	—	—	3	5.3	—	—
Dactylitis, ...	...	5	1	4	10	8.4	8	4.3
Tuberculosis Cuti, ...	...	2	—	—	2	9	—	—
Miscellaneous, ...	...	3	1	—	4	4	2	—
		18	4	5	27			

In all 32 patients were dismissed from the wards during the year 1932. At the end of 1932 there were 5 indoor patients. The number of patients receiving indoor treatment has fallen considerably, due to the adequate accommodation at Mearns Kirk Hospital for cases of surgical tuberculosis requiring institutional treatment.

Adenitis.—Patients with adenitis are in the majority, and the results of treatment are very satisfactory, 47 per cent. having been classified as healed. Areas of skin involvement became firmly healed and the glands either no longer palpable or relatively small, hard, and inactive. Where a gland softened with the formation of a cold abscess, incision, and in a few cases aspiration, was combined with actinotherapy. In many of the cases which did not improve treatment was insufficient, either due to too short duration or to irregularity of attendance. In some cases, however, the glandular condition did not respond, the

glands remaining enlarged and showing little evidence of activity. Where such a case was not responding surgical intervention was advised and the case was referred to hospital for this purpose.

Lupus and Tuberculosis of the Skin.—The results of treatment of lupus tend to appear disappointing, owing to the prolonged period required for treatment and the perseverance necessary on the part of the patient in order to attain a good result. Local treatment with caustics was combined with actinotherapy in many cases.

Of the cases which did not improve, failure was mainly due to lack of perseverance in treatment. Cases of tuberculosis of the skin other than lupus, as in former years, responded well to treatment.

Abdominal Disease.—In the cases selected as suitable for treatment at Baird Street, i.e., only the milder forms, satisfactory results were obtained in the majority of cases, both the general health and local symptoms being much improved. If satisfactory progress is going to occur, it is usually found that the symptoms improve early in treatment.

Diseases of Bones and Joints, including Dactylitis.—In practically all cases of early disease involving the bones and joints, excluding dactylitis, institutional treatment is provided and taken advantage of. Thus the cases receiving treatment at the clinic are those in which, as a rule, the disease is of long standing and associated with discharging sinuses. It is not surprising, therefore, that as regards the local condition the results do not appear to be very satisfactory. Ultra-violet therapy, however, does much to maintain the general health of these patients who are subjected to a prolonged suppurative process. Cases of dactylitis, as in former years, responded well to treatment.

Others.—These cases included 1 case with multiple lesions, adenitis, dactylitis, and scrofuloderma, 1 case of tuberculosis of the right breast, and 1 of sinus originating in the trochanteric bursa. All healed satisfactory.

Miscellaneous Group.—In this group cases of bronchitis and debility were in the majority, and almost all responded well to treatment, both the cough and general health of the patients being much improved. Other cases which responded included a case with discharging empyema wound, a case of dermatitis, one of Bazin's disease, and one with enlargement of root glands.

GOVAN TUBERCULOSIS LIGHT CLINIC.

During the year 1932 there were 113 sessions of this clinic, held thrice weekly as in previous years, during the months from January till June and from October till December. The following table shows the number of patients treated and the amount of treatment given:—

NUMBER OF PATIENTS AND ATTENDANCES.

	Male.	Female.	Total.
Number of patients, ...	34	49	83
Number of attendances, ...	921	1,691	2,612
Average number of attendances of each patient, ...	27.1	34.5	31.4
Average duration of treatment (months), ...	3.35	4.4	3.95

It was found that male patients were more regular in their attendance than females and children under 15 years of age more regular than adult patients. The types of lesion and the result of treatment are classified in Table II. 10 patients (adenitis, 6; lupus, 3; observation cases, 1) received 2 courses of treatment:—

CLASSIFICATION OF CASES ACCORDING TO LESION AND RESULT OF TREATMENT.

	Total.	Improved.	Average Number of Attendances.	
			Not Improved.	Not Improved.
Adenitis, ...	57	45	12	35.2
Lupus, ...	12	5	7	42.4
Tuberculosis of bones and joints, ...	2	2	—	18.5
Abdominal tuberculosis, ...	3	2	1	39
Others, ...	9	8	1	—
Total, ...	83	62	21	

A large proportion of the cases (83 per cent.) suffered from tuberculosis of glands and of the skin. The increased amount of hospital accommodation available for treatment of surgical tuberculosis made it possible to have most of the patients who required treatment for major surgical lesions admitted to hospital. The number of such cases treated at the light clinic is therefore small. The proportion of satisfactory results in cases of glandular tuberculosis, particularly when associated with sinus formation, was high. In the case of lupus, however, since almost all were of the fibroid type, even prolonged treatment resulted in only slight improvement. Other cases included children suffering from debility, who were under observation, and a few cases of refractory ulcers.

X-RAY WORK.

The number of cases examined at the hospitals is given in the following table:—

			Hospital.	Outdoor.	Total.
Ruchill, ...	...	...	1,191	3,124	4,315
Robroyston, ...	...	...	507	—	507
Mearns Kirk, ...	...	...	1,240	—	1,240
Total,			2,938	3,124	6,062

The number of cases treated by ultra-violet light at Ruchill was as follows:—

					Number of Patients.	Number of Attendances.
Outdoor,	...	...	...	...	14	538
Hospital,	...	...	...	...	184	2,405
Screenings,	...	...	...	...	70	—

SECTION VI.

VENEREAL DISEASES.

General.—Up till 1931 statistics in this Report have shown the number of individual persons suffering from venereal disease, for example, a patient with both syphilis and gonorrhœa was shown as a single case of mixed infection. This designation did not differentiate between patients who had latent syphilis with recent gonorrhœa or early syphilis with chronic gonorrhœa, and for this reason made it impossible to get accurate information as to the number of fresh infections attending the centres. From the commencement of the year under review, however, the statistics deal with venereal infections, not cases, so that a patient suffering from two diseases appears as two independent infections. This change in the methods of accounting has undoubtedly simplified the compilation of statistics and has reduced the number of separate headings necessary for different diseases. The figures in the present Report are, therefore, not strictly comparable with those given in former years. The new method, it may be added, was adopted in England in 1931, and this year in the form V.R.I. (revised) in which the Department of Health obtains the reports from the treatment centres the same classification is used, so that in this respect there is uniformity throughout Great Britain.

Table A shows the volume of venereal disease treated initially during 1932 at the treatment centres in Glasgow. The total number of infections dealt with is almost the same as in 1931, but the number of cases returned as non-venereal is smaller, due to the fact that the introduction of the column for “non-specific venereal infection” has provided an alternative. Most of the cases now returned as “non-specific venereal infections” would formerly have been divided between “cases other than venereal” and “chronic gonorrhœa.” The total attendances of out-patients numbered 185,972—a slight increase compared with 1931.

TABLE A.

NEW PATIENTS ADMITTED TO THE VARIOUS TREATMENT CENTRES
IN 1932.

	Sex.	Primary Syphilis.	Secondary Syphilis.	Late Syphilis.	Congenital Syphilis.	Extra-genital Infection.	Acute Gonorrhoea.	Chronic Gonorrhoea.	Soft Chancre.	Non-Specific Venereal Infection.	Balanitis.	Venereal Warts.	Stricture.	Other than Venereal.	Total.	Aggregate Attendances.
UT PATIENTS—																
Hoc Centres—																
Maie—																
Black Street, Broomielaw, and Bella- houston, ...	M.	189	72	192	14	71,274	195	73	242	282	27	35	698	3,300	125,813	
Female—																
Baird Street and Govan, ...	M.	—	—	—	8	—	1	—	—	—	—	—	—	13	22	382
	F.	12	27	64	29	—	95	60	—	86	—	—	—	86	459	14,758
Other Centres—																
ock Hospital, ...	M.	—	—	—	8	—	—	1	—	—	—	—	—	13	22	344
	F.	14	20	49	35	—	12	252	—	—	—	—	—	49	431	18,720
estern Infirmary, ...	M.	7	9	96	5	—	—	1	—	—	6	—	3	26	153	5,636
	F.	1	15	36	9	1	11	10	—	22	—	—	1	22	128	6,062
ctoria Infirmary, ...	M.	—	—	11	2	—	1	—	—	—	—	—	—	3	17	412
	F.	1	3	11	—	—	—	—	—	—	—	—	—	2	17	615
ve Infirmary, ...	M.	—	—	21	13	—	—	—	—	—	—	—	—	8	42	3,110
	F.	—	—	6	29	—	—	—	—	—	—	—	—	3	38	2,989
oyal Hospital for Sick Children, ...	M.	—	—	—	8	—	—	—	—	—	—	—	—	63	71	500
	F.	—	—	9	5	—	—	—	—	—	—	—	—	71	85	1,525
ate-Natal Centres—																
aternity Hosp., ...	M.	—	—	—	1	—	—	—	—	—	—	—	—	—	1	2
	F.	1	1	28	5	—	5	3	—	59	—	—	—	97	199	2,332
ild Welfare Clinics, ...	M.	—	—	—	3	—	—	—	—	—	—	—	—	2	5	43
	F.	—	—	54	3	—	1	2	—	191	—	—	—	86	337	2,729
No. of Out- Patients, ...		225	147	577	177	81,400	524	73	600	288	27	39	1,242	5,327	185,972	
PATIENTS—																
edere Hospital, ...	M.	4	4	4	—	1	12	1	—	—	4	—	1	—	31	—
	M.	—	—	—	18	—	1	—	—	—	—	—	—	8	27	—
	F.	7	57	7	35	1	15	195	—	—	—	—	—	7	324	—
- Institutions, ...	M.	—	—	12	3	—	—	—	—	—	—	—	—	—	15	—
	F.	—	—	13	7	—	—	—	—	—	—	—	—	—	20	—
No. of In- Patients, ...		11	61	36	63	2	28	196	—	—	4	—	1	15	417	—
1 Total, ...		236	208	613	240	101,428	720	73	600	292	27	40	1,257	5,744	—	—

Syphilis.—The diminution in the number of new cases of syphilis, which was commented upon last year, still continues. Since 1929 the number of cases of acute syphilis (primary and secondary stages) coming to the “ad hoc” centres has diminished by one-third. The following shows the annual figures:—

				Males.	Females.	Total.
1929,	...	...	...	412	39	451
1930,	...	...	...	406	46	452
1931,	...	...	...	296	41	337
1932,	...	...	...	268	39	307

It will be noted that the diminution has taken place entirely in male cases and that the number of females has remained practically unchanged. In all the other clinics also there is a reduction in the number of new cases of syphilis reporting for treatment. It seems reasonable to interpret these figures as an actual reduction in the number of infections occurring in the community because the clinics are certainly not losing any of their prestige and applications for free supply of salvarsan substitutes for medical practitioners show no increase.

With regard to late and congenital syphilis, the “ad hoc” centres do not show any marked reduction in the volume of cases treated over the past four years.

Of congenital syphilis, 240 cases commenced treatment. Only 72 of these, however, were under one year of age. The reduction in the cases of congenital syphilis, which has formerly been noted in these reports, continues. The following table shows the age distribution of new cases of congenital syphilis since 1929:—

Year	—1	—5	—15	—20	—25	—35	+35	Total
1929,	138	87	59	38	15	11	3	351
1930,	84	35	74	29	11	12	5	250
1931,	77	42	71	28	21	20	11	270
1932,	72	18	58	31	36	18	7	240

Gonorrhœa.—There is not, however, apparent from the returns of the “ad hoc” centres, any diminution in the numbers of new cases of gonorrhœa. Since 1929 the number of acute cases dealt with at the special centres was as follows:—

			Males.	Females.	Total.
1929,	...	...	1,465	90	1,555
1930,	...	...	1,265	80	1,345
1931,	...	...	1,250	83	1,333
1932,	...	...	1,275	95	1,370

Gonorrhœa is regarded by the lay public as a disease of much less serious significance than syphilis, and because of this considerable numbers of patients, both male and female, either treat themselves or are treated privately. In the female the fact that the gonococcus can remain active in the tissues without causing marked symptoms renders it extremely difficult to control this disease.

Table B shows the total number of admissions for in-patient treatment. In Belvidere Hospital there are 30 beds, mainly used for the treatment of acute disease and complications arising during attendance at an out-patient centre. Of the 235 patients admitted, 173 were in the acute stage. Baird Street Auxiliary Hospital fulfils the same function with regard to the female "ad hoc" clinics, and also provides indoor treatment for the mothers of cases of ophthalmia neonatorum. A certain number of children suffering from congenital syphilis are also treated in Baird Street.

TABLE B.

SHOWING TOTAL NUMBER OF PATIENTS ADMITTED FOR IN-PATIENT TREATMENT.

	Sex.	Primary Syphilis.	Secondary Syphilis.	Late Syphilis.	Congenital Syphilis.	Extra-genital Infection.	Acute Gonorrhoea.	Chronic Gonorrhoea.	Soft Chancre.	Non-Specific Venereal Infection.	Balanitis.	Venereal Warts.	Stricture.	Other than Venereal.	Total Admissions.	Aggregate Days' Residence.	Average Days' Residence.
Belvidere Hospital,	M.	13	21	32	1	1	124	5	10	—	14	2	11	1	235	7,210	30.6
Baird Street,	M.	—	—	—	7	—	1	—	—	—	—	—	—	—	8	577	72.1
	F.	3	8	2	11	—	32	9	—	—	—	—	—	4	69	3,784	54.8
Baird Hospital,	M.	—	—	—	26	—	1	—	—	—	—	—	—	8	35	2,850	81.4
	F.	13	74	16	44	1	20	260	—	—	—	—	—	7	435	27,007	62.0
Other Hospitals,	M.	—	—	17	9	—	—	—	—	—	—	—	—	—	26	824	31.6
	F.	—	—	15	13	—	—	—	—	—	—	—	—	—	28	1,271	45.3
Total,	...	29	103	82	111	2	178	274	10	—	14	2	11	20	836	43,523	52.0

Table C shows the age incidence of patients with infections for which they were treated for the first time during the year.

TABLE C.

AGE INCIDENCE OF NEW CASES, 1932.

	-1	-5	-15	-20	-25	-35	+35	Total.
Primary Syphilis,	...	—	—	—	9	58	112	236
Secondary Syphilis,	...	—	—	—	24	58	87	208
Late Syphilis,	...	—	—	1	4	30	149	613
Congenital Syphilis,	...	72	18	58	31	36	18	240
Extra-genital Infection,	...	—	—	1	1	5	1	10
Acute Gonorrhoea,	...	1	9	12	66	329	686	1,428
Chronic Gonorrhoea,	...	—	5	11	141	184	235	720
Soft Chancre,	...	—	—	—	2	17	26	73
Non-specific Venereal Infection,	...	—	4	3	28	145	290	600
Balanitis,	...	—	—	—	20	85	120	292
Venereal Warts,	...	—	—	—	—	10	12	27
Stricture,	...	—	—	—	—	1	3	40
Other than Venereal,	...	88	52	63	78	216	439	1,257
Totals,	...	161	88	149	404	1,174	2,178	5,744

The Work of the "ad hoc" Centres.—Considerable amount of discussion has taken place since the inception of the venereal diseases schemes as to the relative efficiency or suitability of centres which are entirely devoted to the purpose of treating venereal disease and centres which form part of a larger general institution. The well-known arguments in opposition to the former were that patients would hesitate to enter a separate clinic earmarked for the purpose of treatment of venereal disease, and that the fact of the patient attending this clinic would render him an easy target for blackmail, &c. These objections may readily interfere with the efficiency of such a clinic in a small community, but in a large city such as Glasgow it has been found that objections to special centres based upon such beliefs have proved to be groundless. Patients come with perfect freedom to the special centres, and there is little evidence that the fear of publicity interferes to any marked extent with the attendance.

During the year 1932 there were 454 cases of acute syphilis treated under the Venereal Diseases Scheme, and of these 307 were dealt with at the "ad hoc" Corporation centres, which excludes an important centre, viz., the Lock Hospital. 1,428 acute cases of gonorrhœa were dealt with, and of these 1,370 came to the "ad hoc" centres. These centres, therefore, were responsible for the treatment of 1,677 out of 1,882 cases, i.e., 89 per cent. of acute or early venereal disease. The proper function of the "ad hoc" centre is, of course, the treatment of disease in the acute stage, and it is undesirable to have too many chronic or late cases attending. In Glasgow there were 1,640 cases of old standing, which came for treatment in 1932, and of these only 624 attended the "ad hoc" centres. It is desirable for the treatment of chronic venereal disease, whether syphilis or gonorrhœa to have access to a general medical and surgical institution, and for this reason the majority of the cases of chronic disease, especially syphilis, are treated in the clinics attached either to the general or special hospitals.

The important venereal infections from the public health point of view are, of course, syphilis and gonorrhœa, and the following extracts from Table A shows the number of such cases :—

Syphilis—

Primary, ...	236
Secondary, ...	208
Late, ...	613
Congenital disease (under 1 year), ...	72
" " (other ages), ...	168
Extra-genital infections, ...	240
	10
Total, ...	<u>1,397</u>

Of syphilis, therefore, in the acute and essentially tractable stage there were 526 cases, including cases of congenital disease under one year. With regard to gonorrhœa, the numbers are as follows:—

Gonorrhœa—

Acute,	...	...	...	...	...	...	...	1,428
Chronic (including venereal warts and stricture),	...	...	...	...	...	...	...	787
Total,	...	...	...	...	...	...	...	2,215

The ratio of acute acquired syphilis to acute gonorrhœa is, therefore, 444 to 1,428, or 1 to 3·2. The other venereal infections are soft sores, 73; and non-specific venereal disease, 892. Many of these non-specific venereal diseases are, if not actually infected with gonococcus at the time of treatment, nevertheless post-gonorrhœal diseases or infections, but are probably of a limited significance from the public health point of view.

Staffing of Female Venereal Diseases Centres.—The increase in the amount of work at the Baird Street Female Clinic has rendered it necessary for Dr. Wattie to devote her whole time to this centre, while one of the Child Welfare medical officers has taken over the Govan centre.

Treatment.—After discussion by the clinicians upon the best method of treatment for acute anterior gonorrhœa, the following scheme was drawn up:—

SUGGESTED SCHEME OF TREATMENT OF ACUTE ANTERIOR GONORRHŒA WITH A VIEW TO REDUCTION IN THE COMPLICATION RATE.

Irrigation.—Anterior for the first week. Posterior thereafter. Preferably twice daily—failing that, once.

Antiseptics.—(1) Pot. permanganate, 1/10,000. (2) Acriflavine, 1/3,000, both with alkalies and alternating.

Smears.—To be taken weekly—results to be entered in case sheet; e.g., G.C., pus cells, epithelial cells, other organisms (specify types) (whether numerous, scanty, or absent).

Altering Strength of Antiseptic.—As severity of attack diminishes P.P. may be increased in strength to 1/8,000.

Duration of Irrigation.—6/52. If prolonged beyond this period reason for prolongation to be given weekly.

It has long been held that there was a tendency to over-treatment in gonorrhœa, and that the results in dispensary practice were not quite so satisfactory as in private. A strict supervision of cases during treatment is desirable in order to cut down the period of treatment as much as possible. Also, where a case is not clearing up sufficiently rapidly a detailed examination by a surgeon frequently locates the refractory lesion and steps can be taken to deal with it.

Defaulting from Treatment.—Table D shows the numbers of defaulters and dismissals from the clinics for the year 1932. There is to be noted a marked improvement in the attendances, especially with regard to acute syphilis in the “ad hoc” centres. In 1930 the percentage of male defaulters who failed to complete one course of treatment for acute syphilis to total dismissals was 48·1, and in 1932 the corresponding percentage was 21·6. With regard to females, the percentage has fallen from 47·1 in 1930 to 17·5 in 1932. In the male “ad hoc” centres, 74 per cent. of cases of acute syphilis attended for more than 12 weeks. Of 375 cases of acute syphilis who left the clinics during 1932, 156 (42 per cent.) attended for more than two years, which is considered a period necessary to permit complete treatment and observation as to cure in such cases. In the female “ad hoc” centres, 32 out of 70 (46 per cent.) attended for more than two years. Comparable figures are not available for the other centres, but since the majority of the cases of acute disease are dealt with at the “ad hoc” clinics, these figures are sufficient to indicate the extent to which treatment is carried out.

The period during which there is the highest frequency of defaulting is during the first four weeks, and after the first three months patients seem to attend fairly well until about the thirty-second week, when there is again an increase in the numbers defaulting. The most important lesson from this is to ensure that each case arriving for treatment is fully instructed in the necessity for continuing treatment after the initial lesions have cleared up, and this advice must be repeated to the patient time and again. Furthermore, special efforts should be made in the event of a patient defaulting during the first week or two of treatment to secure his return.

TABLE D.

SHOWING NUMBER OF DEFAULTERS AND DISMISSALS DURING 1932.

	Syphilis.		Gonorrhoea.		Soft Chancre.		Non-Specific Venereal Infections.		Conditions other than Venereal.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Number of cases which, at the commencement of the year, were under treatment or observation for—	1,652	1,380	1,007	656	23	—	82	15	35	18	2,799	2,069
Number of cases transferred from other Centres, ...	124	84	166	22	15	—	17	7	4	2	326	115
Number of cases removed from the register during any previous year who returned during the year under report for treatment or observation of the same infection, ...	101	88	55	41	—	—	—	—	—	—	156	129
Cases in which treatment or observation was commenced during the year, ...	712	595	1,553	662	73	—	534	358	834	423	3,706	2,038
Totals,	2,589	2,147	2,781	1,381	111	—	633	380	873	443	6,987	4,351
Number of cases which ceased to attend—												
a) before completing a course of treatment for— ...	459	308	596	138	20	—	172	25	—	—	1,247	471
b) after completing a course of treatment, but before final tests as to cure of— ...	221	193	371	104	16	—	74	48	—	—	682	345
Number of cases transferred to other Treatment Centres or to care of private practitioners after treatment for— ...	248	220	323	179	19	—	26	5	—	—	616	404
Number of cases discharged after completion of treatment and observation for—	64	66	652	400	34	—	271	142	—	—	1,021	608
Number of cases in which death occurred from whatever cause, during treatment for—	11	3	2	2	—	—	1	1	1	5	15	11
Number of cases which, at the end of the year, were under treatment or observation for—	1,586	1,357	837	558	22	—	89	159	16	9	2,550	2,083
Totals,	2,589	2,147	2,781	1,381	111	—	633	380	17	14	6,131	3,922

The following table shows the number of courses in defaulting cases of acute syphilis taken off the registers of the dispensaries during 1932 (a course — 5·85 g. “914” and 2·4 g. Bismuth metal):—

Less than one course,	...	...	...	...	...	111
One course, ...	...	...	...	...	...	92
Two courses,	...	...	...	...	...	85
Three courses,	...	...	...	...	...	3
Four courses,	...	...	...	...	...	2
Total,						293

In gonorrhœa amongst the total dismissals 34 per cent. of the males and 20 per cent. of the females defaulted while treatment was incomplete.

Treatment of Syphilis in Pregnant Women.—During the year two of the Child Welfare Centres which had hitherto held sessions for the treatment of pregnant women with syphilis ceased to carry on this branch of the work. The cases are either referred to other Child Welfare Centres or to the female venereal diseases clinics.

The results of the treatment of pregnant women suffering from latent syphilis are difficult to assess. The clinical fact remains, however, that where any woman has a positive Wassermann reaction it is possible by instituting anti-syphilitic treatment to ensure, in almost every case, that the child born will be free from this disease. It is not possible, however, to predict that any untreated woman with a positive reaction will necessarily give birth to a syphilitic child.

In the Child Welfare Centres up till January, 1932, there was one instance of a definite congenital syphilitic child arising from a treated case. The mother of this child was infected in 1924 and had treatment prior to the pregnancy and, in addition, had three injections during the last two months of pregnancy, which apparently were insufficient to prevent infection of the fœtus. In the “ad hoc” female centres for the year ending 1931 there were two cases of congenital syphilis born of patients under treatment. One of the mothers of these children had treatment from the fourth month of pregnancy with 5·1 grammes of “914”; in the other case the amount of treatment was practically nil, the patient only reporting at the eighth month. It may be stated in conclusion that out of 71 cases of pregnant women who attended for treatment there arose three cases of congenital syphilis, and in two of these treatment was both inadequate in quantity and commenced at too late a stage. Out

of these 71 pregnancies, 40 of the children were known to be non-syphilitic six months after birth, and a further 17 were apparently healthy. Nine pregnancies terminated in abortion or miscarriage.

Special returns continue to be received with regard to the treatment of pregnant women, and further attempts will be made to assess the value of treatment.

Routine Wassermann reactions continue to be taken from all women attending the ante-natal centres. The results of these routine tests are shown in the report of the City Bacteriologist, page 182.

Report of the Nurse Almoner.—During the year 598 domiciliary visits were paid by the nurse almoner for the purpose of maintaining the attendance of patients at the clinics. These visits were paid to 237 patients, with the result that 156 of them resumed attendance. Of the remaining 81, 13 were found not to be traceable at the addresses given. Certain of the V.D. clinics held in the hospitals also make use of the services of the nurse almoner, so that there is here an important factor in maintaining co-ordination between the different branches of this service.

Issue of Salvarsan Substitutes to General Practitioners.—There are 45 practitioners on the list, and to these 1,593 doses of salvarsan substitutes were issued.

SECTION VII.

PORT LOCAL AUTHORITY.

Summary of Work during the Year 1932.—There arrived from foreign ports 1,394 vessels and 730 from the Irish Free State.

Of the vessels from foreign ports, 490 had come from or called at infected ports as defined by the Cholera Order—188 direct and 302 via a home port.

The total tonnage of the vessels from foreign ports was 3,964,268 tons, as compared with 4,224,987 tons during the year 1931.

The following table shows the number and nationality of overseas vessels with their crews arriving at the Port of Glasgow during the year 1932, as compared with 1931:—

Nationality.	Number of Vessels.		Number of Crews.	
	1931.	1932.	1931.	1932.
American, ...	52	43	1,892	1,500
British, ...	1,161	1,103	72,212	69,718
Belgian, ...	1	—	11	—
Danish, ...	24	27	447	456
Danzig, ...	1	5	40	170
Dutch, ...	11	6	120	58
Esthonian, ...	2	—	39	—
Finnish, ...	17	27	381	597
French, ...	2	—	48	—
German, ...	20	19	444	354
Greek, ...	6	4	170	110
Italian, ...	8	3	241	75
Japanese, ...	12	11	806	662
Jugo-Slav, ...	4	1	122	27
Latvian, ...	2	1	30	22
Lithuanian, ...	—	2	—	24
Norwegian, ...	58	68	1,268	1,291
Roumanian, ...	—	1	—	29
Russian, ...	6	3	214	131
Spanish, ...	50	51	1,430	1,494
Swedish, ...	14	19	289	384
Totals, ...	1,451	1,394	80,204	77,102

NUMBER OF SHIPS ARRIVING FROM FOREIGN AND IRISH FREE STATE PORTS DURING THE YEAR 1932.

MONTH.	FROM INFECTED PORTS.										From Irish Free State.					
	Class A (direct).						Class B (via a home port).									
	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.		Crews.	Pass.			
January, ...	25	1,675	2	24	1,292	—	49	2,967	2	73	2,638	264	122	5,605	266	60
February, ...	25	1,374	2	12	655	—	37	2,029	2	76	2,923	525	113	4,952	527	60
March, ...	24	1,156	6	28	1,823	—	52	2,979	6	68	2,898	602	120	5,877	608	59
April, ...	15	765	8	30	2,200	2	45	2,965	10	76	3,251	721	121	6,216	731	69
May, ...	13	1,002	33	27	2,062	3	40	3,064	36	68	3,640	2,070	108	6,704	2,106	70
June, ...	13	860	82	28	1,937	48	41	2,797	130	66	4,007	3,233	107	6,804	3,363	65
July, ...	10	627	114	23	1,415	—	33	2,042	114	73	4,895	4,453	106	6,937	4,567	76
August, ...	12	936	196	18	1,199	8	30	2,135	204	83	4,436	2,249	113	6,571	2,453	60
September, ...	10	882	34	28	1,949	4	38	2,831	38	79	4,860	3,337	117	7,691	3,375	49
October, ...	11	736	—	35	1,933	—	46	2,669	—	85	4,281	1,760	131	6,950	1,760	58
November, ...	15	1,263	233	27	2,235	—	42	3,498	233	78	3,821	1,101	120	7,319	1,334	63
December, ...	15	856	6	22	855	—	37	1,711	6	79	3,765	1,021	116	5,476	1,027	41
Totals, ...	188	12,132	716	302	19,555	65	490	31,689	781	904	45,415	21,336	1,394	77,102	22,117	730
1931, ...	271	17,759	18	234	14,463	207	505	32,222	225	946	47,982	17,332	1,451	80,204	17,557	771

From the foregoing table it will be observed that ships arriving direct from infected ports are considerably fewer, 188 against 271 in the previous year. On the other hand, there was an increase from 234 to 302 of ships in this category coming coastwise. With regard to the nationality of ships, British numbered 1,103 in 1932, against 1,161 in the preceding year. There were fewer American, Dutch, and Italian ships, but more from Norway, Sweden, and Finland, as well as from New Zealand.

Infectious Diseases.—The total number of cases of infectious diseases and other illnesses which occurred on board vessels arriving at Glasgow was 252, compared with 287 during the preceding year. The cases dealt with at other ports numbered 135, so that 117 remaining were found on arrival at this port. There was no case coming within the group included in the Cholera, Yellow Fever, &c., Order, while three cases of smallpox noted were removed at other ports. Apart from the 45 cases of illnesses of a non-infectious nature, the largest group of cases dealt with was 22 of venereal disease. During the year 241 merchant service men attended the venereal disease clinic at Broomielaw for treatment. Eleven cases of pneumonia were reported, 7 of whom were removed to hospital, while 7 cases of malaria were similarly dealt with.

TABLE SHOWING DISEASES AND NUMBER OF CASES DURING THE YEAR 1932.

Disease.	Total Number of Cases.	Cases found on Arrival.	Cases dealt with in other Ports.	Cases sent to Hospital in Glasgow.	Cases sent Home.	Deaths.
Plague, ...	—	—	—	—	—	—
Cholera, ...	3	—	3	—	—	—
Enteric Fever, ...	6	—	6	—	—	4
Diphtheria, ...	4	—	4	—	—	—
Scarlet Fever, ...	6	2	4	1	1	—
Smallpox, ...	3	—	3	—	—	—
Measles, ...	19	6	13	3	3	—
Whooping Cough, ...	6	—	6	—	—	—
Chickenpox, ...	18	4	14	2	2	—
Phthisis, ...	17	5	12	1	4	1
Venereal Disease, ...	31	22	9	1	21	—
Pneumonia, ...	21	11	10	7	4	6
Erysipelas, ...	2	1	1	—	1	—
Dysentery, ...	4	2	2	2	—	—
Malaria, ...	14	7	7	—	7	—
Influenza, ...	17	2	15	—	2	—
Mumps, ...	9	3	6	—	3	—
Tonsilitis, ...	8	6	2	—	6	—
Trachoma, ...	1	—	1	—	—	—
Non-Pulmonary						
Tuberculosis, ...	1	1	—	—	1	—
Other Illnesses, ...	62	45	17	9	36	11
Totals, ...	252	117	135	26	91	22
1931, ...	287	121	166	21	100	16

PARROTS (PROHIBITION OF IMPORT) REGULATIONS (SCOTLAND), 1930.

Under the above regulations, 14 parrots and 7 love-birds brought here on 12 vessels were dealt with. Most of these were re-exported and the others destroyed.

ALIENS ORDER, 1920.

All aliens intending to remain in this country for a period of three months or more are subject to medical examination. During the year 1,095 such persons were examined on 66 ships, as follows:—1,027 on 39 ships from U.S.A., 51 on 17 ships from Canada, 12 on five ships from European ports, 3 on three ships from an Asiatic port, one on a ship from Australia, and one on a ship from China. Three medical certificates were issued, one for chickenpox, one for lunacy, and one for general debility and deafness.

RETURN OF ALIEN PASSENGERS ARRIVING IN GLASGOW DURING 1932.

Nationality.			Non-Transmigrants.	Transmigrants.	Total.
Americans, ...	...	...	3,914	29	3,943
Europeans, ...	...	...	47	112	159
Asiatics, ...	...	...	7	4	11
Total, ...	...	...	3,968	145	4,113
Total, 1931, ...	...	...	4,017	53	4,070

Emigrants.—During 1932, 120 ships carrying emigrants left the Clyde. Of these, 40 sailed for America, a decrease of 3; and 80 sailed for Canada, a decrease of 18 compared with the previous year. Passenger ships sailing from the Clyde for Australia and New Zealand embark passengers at Liverpool.

The following is a return of emigrants and ships which left Glasgow during 1932:—

Country.			Ships.	British Subjects.	Other Nationalities.	Total.
America, ...	...	...	40	4,610	3,036	7,646
Canada, ...	...	...	80	7,237	544	7,781
Total, ...	...	...	120	11,847	3,580	15,427
Total, 1931, ...	...	...	141	13,371	3,931	17,302

RAT DESTRUCTION.

Public Health (Deratization of Ships) Regulations (Scotland), 1929.—The work of issuing certificates under Article 28 of the International Sanitary Convention, 1926, has been carried out

in the same manner as in recent years, as explained in the report for last year. An endeavour is always made to meet the urgent requests of shipping companies or of their agents, and to facilitate in every way the movement of vessels, either by carrying out the fumigation after hours, overnight, or even during week-ends. Delay in making requests for a certificate sometimes takes place where the head office of the Shipping Company is situated in another town, and word is only sent through at the last minute before the vessel is due to load or depart for a cargo elsewhere.

As, however, the port local officers keep themselves informed of the currency of ships' deratization certificates and of the conditions of the various vessels arriving in the harbour with regard to evidence of rats, it is usually possible to comply with these late applications. Deratization is also facilitated by the more frequent application of HCN gas for fumigation purposes, which is undertaken by outside contractors; this relieves the Port Local Authority of any responsibility for accidents. Sulphur fumigation, however, still continues to be done by the Department where hydrocyanide is not requested. During 1932 sulphur fumigation was carried out in 75 vessels and HCN used in 44 compared with 101 and 26 respectively during the preceding year. In 32 instances certificates were granted after trapping and 3 exemptions were issued.

The following table summarises the results of ship deratization by SO_2 , HCN, and trapping during the year, compared with the numbers for the preceding year:—

	Number of Ships Deratised.			Ex- emptions.	Number of Rats Recovered.
	By SO_2 .	By H.CN.	By Trap- ping.		
From Infected Ports, ...	58	40	29	300	1,529
From Non-Infected Ports,	17	4	3		88
	75	44	32	300	1,617
1931, ...	101	26	29	276	1,864

The number of rats caught by trapping on ships not requiring certification was as follows:—Ships from Infected Ports, 419; Ships from Non-Infected Ports, 79; on docks and other premises, 449; total, 947.

The total number of rats caught by trapping on ship and on shore premises adjacent to the docks and found dead after fumigation are classified in the following table:—

Year.	Brown Rat. Rattus Norvegicus.	Black Rat.			Total.
		Rattus Rattus.	Rattus Alexandrinus.	Rattus Frugivorus.	
1932, ...	404	629	740	739	2,512
1931, ...	201	824	680	1,024	2,789

Of the 2,512 rats killed, 285 were submitted to the City Bacteriologist for examination for plague bacilli, with negative result. Of the total number of rats disposed of, 1,546 were males and 966 females.

NUISANCES ON SHIPBOARD.

Inspections and re-inspections to the number of 2,274 of vessels in harbour were made during the year. The visits to oversea steamers numbered 1,392, and the revisits 578. In oversea sailing vessels, two inspections were made and one revisit, while 231 coasting steamers and 19 sailing craft were examined, revisits being paid to 41 of the former and 10 of the latter. 129 verbal warnings were given to masters where nuisances of a minor nature were found, and 98 intimations and 5 notices (under the Public Health Act) were served where defects existed. 382 verbal instructions were given and 139 notices served on masters of vessels re locking-up of water-closet accommodation while vessels were in port.

The nuisances discovered numbered 2,211—in forecastles, rooms, &c., 707, and water-closets, wash-houses, &c., 328.; while structural defects were found in 545 instances—443 within crews' quarters, and 102 in water-closet and lavatory compartments. General complaints were recorded in 631 instances.

Sanitary Defects and Nuisances.—The following table shows the nuisances found on board vessels arriving in the harbour:—

ARISING FROM STRUCTURAL DEFECTS.

<i>Forecastles, Rooms, &c.—</i>	1930	1931	1932
Overhead decks leaking, ...	95	60	58
Ports defective, ...	155	153	150
Skylights out of repair, ...	2	3	2
Without scupper-pipe or same cemented, ...	1	2	2
Ventilators plugged, out of repair, or unshipped,	2	6	4
Without bogies or funnels, or such out of repair,	19	18	10
Inadequately lighted or ventilated, ...	17	14	6
Radiators or steam-pipes defective, ...	17	24	19
Doors to forepeak and forecastle broken, ...	6	8	5
Ship's sides leaking, ...	1	1	1
Anchor chain exposed by sheathing being out of repair, ...	2	1	2
Doors of food lockers and seats out of repair, ...	99	152	142
Requiring wood sheathing or cork-spraying for "sweat,"	2	5	4
Hawse pipes defective, ...	6	4	3
Floors broken and out of repair, ...	10	6	28
Bulkhead between forecastle and W.C. compartment broken, ...	1	3	2
Scuppers required, ...	2	1	—
Waste pipe leaking, ...	3	4	5
	440	465	443

Water-closets, Urinals, Washhouses, &c.—

Flushing apparatus, basins or discharge pipes defective, ...	25	28	21
New water-closet required, ...	12	14	15
Ports defective, ...	4	3	5
Floor and woodwork out of repair, ...	4	2	3
Doors broken and new locks required (w.c.'s must be locked while ship is in harbour),... ..	18	20	27
Ventilators plugged, ...	3	3	2
Woodwork of w.c. basin broken, ...	32	29	22
Compartments defective in light and ventilation, ...	14	8	7
	112	107	102

ARISING FROM MISUSE.

<i>Forecastles, Rooms, &c.—</i>	1930	1931	1932
Alleyways and companionways dirty, ...	101	110	123
Floors, mat coverings, ceilings, woodwork, &c., dirty, ...	185	190	176
Interior of ships' sides or woodwork dirty (to be limewashed or repainted), ...	131	126	136
Galley dirty	16	19	15
Tables and benches dirty, ...	246	218	214
Scuppers choked (water lying stagnant), ...	15	18	25
Bunks dirty, ...	19	15	18
	713	696	707

Water-closets, Washhouses, &c.—

Floors, ceilings, and woodwork dirty, ...	94	108	97
Basins, hoppers, or troughs fouled, corroded, or choked, ...	100	109	110
Scuppers choked, ...	29	37	29
Wash-house dirty, ...	7	15	12
Interior requiring limewashing or repainting,... ..	64	84	74
Waste-pipe defective, ...	3	4	6
	297	357	328

GENERAL NUISANCES.

Food lockers dirty, ...	286	278	246
Bilges (hold) dirty, ...	67	66	50
Gear and foodstuffs stored in sleeping compartments, ...	12	16	17
Drinking-water tanks dirty and in need of re-cementing, ...	74	72	67
Drinking-water tanks out of repair or uncovered, ...	2	4	3
Accumulation of rubbish in fore-castle or on deck, ...	72	136	108
Fore-castle infested with vermin, ...	184	168	94
Bedding dirty or verminous, ...	159	137	46
Bilges ventilating into fore-castle, ...	—	1	—
	856	878	631

The following table shows the number of oversea and coastwise ships inspected in the harbour during the years 1930-1932:—

	Inspections.			Re-inspections.		
	1930	1931	1932	1930	1931	1932
Oversea Steam, ...	1,624	1,450	1,392	636	645	578
„ Sail, ...	1	1	2	1	1	1
Coast Steam, ...	311	281	231	48	55	41
„ Sail, ...	24	23	19	13	12	10
				1930	1931	1932
Intimations, ...	...	...	...	191	126	98
Warnings, ...	...	...	...	102	149	129
Notices, ...	...	...	...	7	6	5
Letters to other Port Authorities, ...	...	...	...	58	54	61
<i>Nuisances—</i>						
Functional, ...	...	...	...	1,010	1,053	1,035
Structural, ...	...	...	...	552	572	545
General, ...	...	...	...	856	878	631

Of the total arrivals, 1,103 were British and 291 vessels sailed under foreign flags, the latter including 21 different nationalities, Americans, Norwegians, Spaniards, Germans, Jugo-Slavians, Swedes, and Finns predominating.

Anthrax.—Goat-skin thongs continue to be used as bindings for orange boxes from various ports in Spain. During the year samples have been examined by the Bacteriologist for the presence of anthrax bacillus, with negative result, as was also the case with regard to samples of imported hides also examined.

Rags, Hair, Hides, and Bones.—The following table shows the imports of rags, hair, hides, and bones, with the source of origin and number of shipments:—

Source of Origin.	No. of Ships.	Rags. Bdles.	No. of Ships.	Hair (various). Bdles.	No. of Ships.	Hides (various). Bdles.	No. of Ships.	Bones. Bags.
Continent, ...	29	327	11	211	66	25,883	—	—
Canada, ...	—	—	2	5	2	21	—	—
United States, ...	—	—	27	4,217	3	57	—	—
South America, ...	—	—	15	348	6	15,931	6	427
Australia & N. Zealand, ...	—	—	—	—	30	5,741	—	—
India, ...	3	178	—	—	26	735	13	6,524
South Africa, ...	—	—	—	—	9	946	1	200
Japan, ...	5	61	—	—	—	—	—	—
Egypt, ...	—	—	1	15	—	—	2	886
Straits Settlements, ...	—	—	—	—	10	23	—	—

In addition to the foregoing, there is a considerable quantity of rags imported from Irish Free State ports.

UN SOUND FOOD REGULATIONS.

The following table shows the character and quantity of the foodstuffs imported direct during 1932 (but does not include coastwise or transhipped cargoes), a percentage of which was examined by the Food Inspectors before removal:—

Article.	Weight.		Article.	Weight.	
	Tons.	Cwts.		Tons.	Cwts.
Apples, ...	33,950	18	Lemons, ...	4,185	2
Apricots, ...	281	11	Liquorice, ...	12	2
Almonds, ...	968	19	Meal (various), ...	19 854	14
Bananas, ...	10	14	Meats, (canned, &c.)	3,218	19
Bacon, ...	30	16	Melons, ...	1,981	12
Baking Powder, ...	—	3	Milk (canned), ...	65	6
Barley, ...	9,019	16	Milk (powder), ...	341	19
Butter, ...	5,698	15	Molasses, ...	8	13
Cereals (Oats, Rye, &c.)	104,684	14	Macaroni, ...	277	8
Cheese, ...	5,870	16	Nuts (various), ...	2,866	11
Coffee, ...	—	14	Oils (various), ...	11,652	10
Cocoa, ...	118	7	Onions, ...	44,357	—
Condiments, ...	3,904	17	Oranges, ...	32,823	16
Confectionery, ...	167	4	Orange and Lemon Peel,	136	14
Cream of Tartar, ...	124	19	Peaches (canned), ...	1,234	11
Eggs, ...	43,173	19	Pears, ...	2,531	16
Eggs (liquid), ...	702	7	Pears (canned and dried),	2,328	8
Eggs (albumen), ...	730	16	Pineapples, ...	1,847	9
Fish (canned, &c.), ...	443	—	Plums (canned and dried),	915	17
Fruit (canned), ...	3,075	18	Pomegranates, ...	720	5
Fruit (dried), ...	6,882	5	Potatoes, ...	8,540	4
Fruit (pulp), ...	793	5	Peas, ...	6,675	11
Flour (various), ...	113,411	3	Rice, ...	5,938	2
Farinaceous Foods, ...	2,411	12	Sundries, ...	4,905	10
Glucose, ...	2,592	6	Sugar, ...	3,503	15
Grapes, ...	4,794	14	Syrup, ...	51	1
Grape-Fruit, ...	1,344	8	Tomatoes, ...	121	13
Ham, ...	4,248	17	Tomatoes (canned), ...	954	—
Honey, ...	121	19	Vegetables (canned), ...	852	16
Lard (pure), ...	2,705	11	Wheat, ...	204,534	2
Lard (compo), ...	15	8			
<i>Total weight, ...</i>			<i>719,717 tons 17 cwts.</i>		

The following foodstuffs were found unfit and disposed of to the satisfaction of the Medical Officer of Health:—

Article.	Weight.		Article.	Weight.	
	Cwts.	Qrs.		Cwts.	Qrs.
Almonds, ...	2	—	Fruit pulp, ...	3	—
Apples, ...	11	1	Meats (canned), ...	4	—
Butter, ...	—	1	Milk (canned), ...	6	3
Desiccated Cocoanut, ...	—	2	Onions, ...	6	3
Fats, ...	432	—	Oranges, ...	3,743	—
Flour, ...	662	3	Potatoes, ...	53	—
Fruits (canned), ...	—	1	Rice, ...	13	1
Fruits (dried), ...	28	3	Wheat, ...	1,571	1
<i>Total weight, ...</i>			<i>6,538 cwts. 3 qrs.</i>		

The foregoing table shows the great variety of the foodstuffs inspected and dealt with. The method of procedure in each case is similar. The suspected foodstuffs are detained for further inspection, the consignee is communicated with, and a suitable time arranged for the re-examination of the material. As a rule the consignees, on being satisfied as to the unsoundness of the food, are amenable to reason, and empower the inspector to have the condemned food disposed of, thereby obviating the necessity for obtaining a warrant from the Sheriff or Magistrate. Much time is often taken up in examining and supervising the reconditioning of consignments. The following are examples of this:—

Damaged Dried Fruits.—In a consignment of prunes and raisins from Vancouver a number of cases were in a damp and dirty condition, due to contamination with sea or bilge water, and unfit for human consumption. The consignment of 3,150 cases was detained and sorted out on various dates along with the consignees. Finally it was found that 119 cases (64 of dried prunes and 55 of raisins) were totally unfit for human consumption. The unsound material was removed and destroyed under the supervision of an officer from this department. The total weight condemned was $27\frac{1}{2}$ cwts.

Damaged Flour.—On the arrival of a vessel from Fremantle it was found that her cargo, consisting of flour and bran, showed many bags in a damaged condition. The bran being for cattle was not interfered with, as well as a number of slightly-damaged bags of flour, which were reconditioned on the quayside. After several visits and further re-examination of the heavily-damaged flour, it was agreed that the entire lot, consisting of 116 bags, be sold for technical purposes. These were ultimately purchased by a firm outwith Glasgow, who submitted the necessary guarantee *re* the ultimate disposal of the damaged flour—10 tons in all.

Unsound Potatoes.—A consignment of Teneriffe potatoes, which arrived coastwise from Liverpool, was found to show a considerable amount of waste. The owners were communicated with, and agreed to make a thorough examination of the unsound material on the quay, all stained boxes to be opened and examined. The inspection extended over several days, and ended with the condemnation and destruction of 53 boxes.

Damaged Flour and Grain.—An Australian cargo of flour, wheat, and bran was found to be extremely damaged by sea water, the ship having “sprung” several plates in heavy weather. The examination and disposal of this cargo presented great difficulty, as it was found that many bags of flour which were apparently

sound had become tainted by the offensive gases given off by the damaged bags. As a result of several meetings and inspections, the whole of the bran, consisting of 30,000 bags, was released for cattle feeding. The wheat and flour in bags were divided into three grades. A quantity of wheat landed in bulk, owing to bags having become rotten, was classed as grade 3. Four hundred and sixty-one bags of wheat were classed under grades 1 and 2 and 717 as grade 3. A further 2,169 bags of flour were classed as grade 1, 343 as grade 2, and 362 as grade 3. The sound flour from the vicinity of the damage was examined for "taint," and several samples were submitted to the City Analyst, who reported that the samples had an odour of damp flour, which could probably be removed by aeration. Samples of bran, flour, and wheat, submitted at an earlier date, were, without exception, reported as being unfit for human consumption. In view of the Analyst's report, all tainted bags were released on condition that the flour be thoroughly aerated before being put into the market. Grades 1 and 2 of the flour were reconditioned on the quay or in one of the stores adjacent, reconditioning being supervised by an inspector. A number of bags of grade 3 flour were sold, without being reconditioned, for technical purposes, under guarantee from the purchasers, the destination of the flour being advised to the Local Authority of the area. The remaining bags of this grade were released and despatched outwith the city for reconditioning—the work to be carried out under the supervision of the Local Authority of the district to which the flour had been removed. The damaged wheat was sold for cattle and poultry feeding, and, after the usual guarantees had been submitted, was released, the Medical Officers of Health of the various districts being duly notified as to the quantities, &c., arriving in their areas. The work of examination and supervision of reconditioning extended from 19th February until 17th March.

AGRICULTURAL PRODUCE (MEAT REGULATIONS) ACT (NORTHERN IRELAND), 1930.

The foregoing regulations are now in force in Northern Ireland, and, briefly stated, apply to the exportation of fresh meat, cured meat, and offals from Northern Ireland to Great Britain, Irish Free State, and the Isle of Man. The regulations provide for the registration and licensing of all premises used for the slaughter, preparation, and crating of meat, poultry, and rabbits intended for human consumption, and include the handling of offals derived therefrom. All such meats must now be certificated, providing the consumer with the much-needed safeguard of examination by qualified veterinary inspectors of

all meats intended for human consumption previous to export. This materially assists the inspector at the port of unloading in the course of his duties, the certificate being an assurance that the meat, &c., was derived from animals which at the time of slaughter were free from disease. The inspector has now only to satisfy himself that the meat, &c., is still sound and in fit condition to be used for human food. In the absence of the certificate, the meat can now be detained pending information as to its destination and ultimate disposal. The coming into force of the above regulations now brings Northern Ireland into line with the other countries of the Empire, such as Canada, Australia, New Zealand, &c.

PUBLIC HEALTH (PRESERVATIVES, &c., IN FOOD) REGULATIONS (SCOTLAND), 1925.

The above regulations apply to all imported articles of foodstuffs except where these are intended for re-export or for use as ship's stores:—

Cream.—Fairly large consignments of cream arrive from the North of Ireland and Irish Free State ports. During the year 29 samples of cream were examined for boron preservative with negative result.

Arsenic in Apples.—Of 36 samples of various brands of apples, 28 were reported as containing no arsenic. The remaining eight samples contained arsenic within the prescribed limit. Twenty-four of the samples were taken from apples landed here from North American ports, and 12 were from Australasian and Canadian ports. Of the 12 samples taken from these latter ports, the arsenic found was well within the limit. It was not considered necessary to condemn any of the fruit.

Boric Acid in Oranges.—Nine samples of oranges were taken during the year and submitted to the City Analyst, who reported the presence of boron preservatives in all samples in small quantities ranging from 0.002 to 0.016 of a grain per pound. While the evidence indicates that some attempt to preserve the fruit by dipping in boron solution is being adopted, in view of the fact that the quantity indicated is naturally present in citrous fruits, an obvious difficulty arises in any attempt to determine the amount of boron which might be regarded as having been added to the fruit by the process of treatment. Samples of grape fruit were also submitted and found to contain boron compounds in varying degrees from 0.0008 to 0.021 of a grain per pound.

FOODSTUFFS EXAMINED.

During the year foodstuffs were sampled and submitted to the City Analyst, who reported as follows:—

Article.	Samples Reported.		Notes on Defective Samples.
	Fit for Human consumption.	Unfit for Human Consumption or not in conformity with Regulations.	
Almonds, ...	1	1	Mouldy, damaged by Grape-juice.
Apples, ...	36	—	
Apricot Pulp, ...	—	1	Fermentation. 3 cwts. condemned.
Baking Powder, ...	1	—	
Blackberries, ...	2	—	
Butter, ...	23	1	Damaged by brine. 28 lbs. condemned.
Cereals (Grapenuts, &c.),	13	3	Damaged by sea-water. 6 cwts. of rice condemned.
Coffee and Coffee substitute,	4	—	
Cheese, ...	11	—	
Confectionery, ...	14	1	Damp and mouldy. 56 lbs. condemned.
Cream, ...	29	—	
Citric Acid, ...	2	—	
Cream of Tartar, ...	11	—	
Egg-Yolk (liquid), ...	9	—	
Egg Albumen, ...	3	—	
Egg Whole, ...	1	—	
Fats, (various), ...	18	1	Rancid and decomposing, containing an excess of free fatty acids. 432 cwts. condemned.
Fish (canned, &c.), ...	19	—	
Flour (various), ...	2	14	Damaged by sea-water. 318½ cwts. condemned.
Fruits (canned), ...	45	—	
Fruits (dried), ...	36	4	Damp and mouldy. 27½ cwts. condemned.
Fruit-Pulp, ...	4	—	
Gelatine, ...	1	—	
Glucose, ...	2	—	
Grain (wheat, &c.), ...	—	3	Damaged by sea-water. 1,571½ cwts. condemned.
Grape-Fruit, ...	4	—	
Ginger (wet and dry), ...	4	—	
Ham, ...	1	—	
Honey, ...	2	—	
Jam, ...	1	—	
Lard, ...	10	—	
Lard compo, ...	2	—	
Macaroni, ...	1	—	
Margarine, ...	1	—	
Meats (canned, &c.), ...	24	—	
Milks (canned), ...	2	1	Not in conformity with Regulations. 6½ cwts. condemned.
Milks (dried), ...	1	—	
Mineral Waters, ...	1	—	
Oils (various), ...	33	—	

Samples Reported.				Unfit for Human Consumption or not in con- formity with Regulations.	Notes on Defective Samples.
Article.		Fit for Human Con- sumption.	—		
Onions, ...	...	—	1	1	Damaged by heat and "scald." 4 cwts. condemned.
Oranges, ...	...	9	—	—	
Peas, ...	...	1	—	—	
Peel in Brine, ...	...	1	—	—	
Pork and Beans, ...	...	9	—	—	
Salt, ...	...	2	—	—	
Sauces, ...	...	9	—	—	
Soups (canned, &c.), ...	...	11	—	—	
Sugar, ...	...	9	—	—	
Syrup, ...	...	3	—	—	
Tartaric Acid, ...	...	1	—	—	
Tea, ...	...	10	—	—	
Tomatoes (canned), ...	...	12	—	—	
Vegetables (canned), ...	...	9	—	—	
Wines, ...	...	1	—	—	
Water, ...	...	6	—	—	

FOREIGN MEAT REGULATIONS.

The following statement, compiled from information supplied by the Corporation Veterinary Surgeon, indicates the work done under the Foreign Meat Regulations:—

EXAMINED.

BEEF (<i>Fresh Meat</i>)—				OFFAL—			
Quarters, ...	...	29,437		Ox Tongues, ...	...	497	
Boxes, ...	...	1,231		Ox Tongues (bags), ...	...	68	
Bags, ...	...	214,845		Ox Tails (bags), ...	...	202	
(<i>Salt Meat</i>)—				Ox Livers (bags), ...	...	964	
Mess Beef (barrels), ...	...	90		Ox Livers (boxes), ...	...	2,561	
Mess Beef (tierces), ...	...	25		Ox Livers (tins), ...	...	10	
				Ox Tripe (bags), ...	...	245	
				Ox Tripe (boxes), ...	...	6,929	
				Ox Kidneys (bags), ...	...	1,150	
				Calves' Tongues (bags), ...	...	5	
				Casings (tierces), ...	...	5	
				Casings (casks), ...	...	203	
				Fat (boxes), ...	...	259	
				Fat (cases), ...	...	902	
				Pig Tongues (tierces), ...	...	5	
				Pig Livers (tierces), ...	...	5	
				Pig Kidneys (boxes), ...	...	51	
				Pork Loins (cases), ...	...	516	
				Pork Loins (boxes), ...	...	2,840	
				Sheep Kidneys (cases), ...	...	240	
				Sheep Kidneys (crates), ...	...	25	
				Lamb Livers (crates), ...	...	30	
				Kidneys (boxes), ...	...	688	
				Sweetbreads (cases), ...	...	155	
				Sweetbreads (boxes), ...	...	275	
				Turkeys (cases), ...	...	150	
				Turkeys (boxes), ...	...	216	
				Ducks (barrels), ...	...	13	
VEAL—							
Sides, ...	...	306					
Bags, ...	...	4,331					
Boxes, ...	...	599					
MUTTON AND LAMB—							
Carcases, ...	...	154,635					
PORK—							
Carcases, ...	...	14,399					
Sides, ...	...	200					
Cuts, ...	...	2,144					
(<i>Salt Meat</i>)—							
Mess Pork (barrels), ...	...	320					
BACON AND HAMs—							
Pork Hams (boxes), ...	...	3,666					
Bacon (bags), ...	...	3,476					
Pork Hams, ...	...	552					

DESTROYED.

BEEF (bags), ...	...	29	SHEEP (carcasses), ...	3
BEEF (quarters), ...	...	19		

SECTION VIII.

HOUSING.

The following report is contributed by Dr. W. G. Clark, Senior Deputy Medical Officer of Health:—

There have been no features of outstanding importance connected with the housing operations during the year. Further experience of the operation of the 1930 Act in connection with clearance areas has shown that the procedure is slow. While negotiations between the local authority and the majority of owners of properties in each area are satisfactory, the latter accepting the decision of the local authority officials with regard to the fitness of their properties, a few owners cannot come to terms with regard to compensation, and negotiations become prolonged. The Garngad Clearance Scheme, referred to in last year's report, has not yet been completed owing to this difficulty, and will probably be the subject of a public enquiry during 1933. The first clearance area in the city under the Act was approved by the Department of Health for Scotland during the year in the Old Shettleston Road district. This area comprises in all 131 houses, and the site when cleared will be utilised to rehouse tenants displaced under this Act.

Owing to the difficulty of providing rehousing accommodation for tenants from the Nitshill and Landressy Street areas referred to in last year's report, these schemes were not proceeded with during the year, but it is anticipated that rehousing provision in the neighbourhood will be available for the Nitshill Scheme during next year. Further consideration has had to be given to the Dalmarnock Ward area in view of the Town and Country Planning (Scotland) Act, 1932, and it is anticipated that this scheme will be ultimately rather larger than was originally contemplated.

The three years' programme proposed by the Corporation in December, 1930, is still behind owing to the difficulty of securing suitable sites. This aspect of the problem of dealing with the insanitary house still remains the cardinal factor in the city's housing problem. At the end of the year 234 houses built under the 1930 Act had been completed and 1,964 were in course of erection.

During the past ten years the Corporation have promoted improvement schemes totalling in all 6,575 houses, as at 31st December, 1932, and of these, 6,441 had been closed or demolished at that date. During the same period the Corporation had also dealt with 1,640 houses under the closing and demolition sections of the various Housing Acts, and of these, 1,420 had been closed or demolished or converted into business premises at the end of the year. Only 27 of the houses represented as unfit for human habitation had been rendered fit by the owners and reoccupied. During the same period 1,404 houses had been closed or demolished by order of the Dean of Guild Court as being dangerous buildings, and included in this number were 394 houses which had been dealt with by the Housing Committee under the Housing Act. Thus, during the past ten years, 9,225 houses in the city have been condemned as unfit for human habitation or as dangerous, and of these, 8,871 have been closed or demolished, and the tenants displaced.

The number of houses occupied in the various rehousing schemes at the end of the year was 6,240. As was shown last year, confining figures entirely to the slum clearance schemes, only 74 per cent. of the original tenants of the slum property take possession of the new houses provided by the Corporation. An additional 12 per cent. of houses are necessary to enable that number of tenants of the original slum houses to take advantage of substitution with other suitable families.

Viewing the problem from the figures quoted above, it is apparent that the Corporation have been able to secure the demolition of 8,871 houses by the provision of 6,240 new houses, that is by the provision of just over 70 per cent. of new houses. This figure is even more striking when it is remarked that in the various schemes it has been necessary to rehouse a number of double occupancies and lodger families. While the ideal of a clearance scheme is the provision of a new house for every house condemned, experience shows that this is not carried out. Several of the new houses provided have been let a number of times within a comparatively short period, and there is a definite movement within the rehousing schemes themselves. This surplus of houses has enabled the rehousing in the vacated houses of tenants displaced from insanitary and dangerous dwellings. While this procedure is satisfactory from our point of view, it may be pointed out that, within the past ten years, the operations of the Corporation have resulted in a decrease of 2,631 houses available for the poorer working classes. On the other hand it has to be recognised that there have been provided within the same period a large number of the "intermediate" type of house, of which 4,524 were let at the end of the year. The lowest rental of this

type of house, however, is 10s. 6d. per week (inclusive of tenants' rates), a figure definitely higher than that of the average working class house in the city.

The average number of relets in the rehousing schemes is now about 25 per month, and, while these houses permit the closing of a certain number of insanitary dwellings, it has been felt for some time that use might be made of the relets to abate some of the gross cases of overcrowding in the city. The Housing Committee have, therefore, agreed to let to tenants of overcrowded houses, not condemned as uninhabitable, and who are not financially able to have an "intermediate" house, any relets in the rehousing schemes, preference being given to overcrowded families in which there are tuberculous patients. The Manager of the City Improvements Department is co-operating closely with the Health Department in giving effect to this policy, and it is hoped by this means to relieve some of the gross cases of overcrowding.

While there are some 12,500 houses in the city which are officially regarded as possessing degrees of disrepair or sanitary defects which render them unfit for human habitation, this figure does not exhaust the number of houses which are well below the modern standard of fitness. Properties deteriorate each year and unless carefully managed by thoughtful factors may soon degenerate into a condition such as would justify their condemnation. While it is recognised that the average property is fairly well looked after, there are properties in which no repairs are carried out without the stimulus of notices from the sanitary authority. Again, in many of the older types of house in Glasgow the sanitary conveniences are deficient, and it is satisfactory to note that this aspect of housing is beginning to occupy the attention of Parliament. That this problem in Glasgow demands very serious consideration is apparent from the following figures relating to sanitary conveniences:—

5,873 water closets serve 2 tenants.				
18,309	„	„	3	„
7,360	„	„	4	„
1,769	„	„	5 or more tenants.	

This gives a total of over 105,000 households using water-closets in common with others. Taking 4·1 as the average number of units in a household, it would appear that over 430,000 inhabitants in Glasgow habitually use water-closets in common. Again, the total number of occupied houses in the city at the end of the year is given by the City Assessor as 263,321, and the

approximate number of these with fixed baths is under 90,000. Every new house built at the present day possesses all such sanitary conveniences and these, along with the provision of press, larder, and scullery accommodation, have come to be included as necessities for making a house fit in all respects for human habitation.

During the year several reconditionings or reconstructions of properties have been attempted in the city, and it has become apparent that these efforts will have to be controlled by the local authority. It is unfortunate that there are no relative bye-laws in force at the moment, as ill-considered alterations may perpetuate features which are contrary to accepted housing principles. The Glasgow Building Regulations, which have been in force since 1900, are at present being reviewed, and this aspect is receiving attention. Bye-laws under Section 59 of the Housing (Scotland) Act, 1925, have been framed, but these are being held over until the revised building regulations have become statutory. Meanwhile every endeavour is made to ensure that owners who are contemplating reconstruction of existing properties should consult the Department.

Later on in this section reference is made to the progress of tenants in the rehousing schemes, but attention may be drawn to the problem of families who have been removed from the slums to the new housing properties and who have reverted to the slums on repeated occasions. One family has been removed on no less than five occasions, and others less seldom. These represent tenants who would prove unsatisfactory anywhere and whose conduct leads to the belief that the slum problem in a large city will ultimately reach a stage when there will be a residue of citizens who will have to be dealt with by more stringent measures.

HOUSING (SCOTLAND) ACT, 1930.

For the purpose of Section 14 (1) of the above Act, 391 inspections were made during the year. The details as to inspections, notices issued, and defects found are as follows:—

Division.	Inspections.	Notices issued.	No. of Defects.	No. of Houses Affected.
Central, ...	—	—	—	—
Northern, ...	—	—	—	—
Eastern, ...	—	—	—	—
South-Eastern, ...	—	—	—	—
South-Western, ...	391	15	190	49
	391	15	190	49

The work was carried out by the owners in all cases, and no work was required to be done by the Local Authority.

CLOSING ORDERS.

For the purposes of Section 16 of the 1930 Act, 1,983 inspections were made, resulting in the representation to the Local Authority of 505 houses considered to be unfit for human habitation. The decisions of the Housing Committee as to the action to be taken and the position of the houses at 31st December, 1932, are shown in the following tables:—

SUMMARY STATEMENT SHOWING POSITION WITH REGARD TO REPRESENTATIONS
MADE UNDER SECTION 16 DURING 1932.

Division.	NUMBER OF HOUSES.					NUMBER OF HOUSES.					FAMILIES REHOUSED				
	Number of Houses. Represented.	Closing Orders.	Demolition Orders.	Not to be used for Human Habitation.	To be Rendered Fit and Occupied.	Closed.	Demolished.	Rendered Fit and Occupied.	Converted into Business Premises.	Still Occupied.	Rehousing Scheme.	"Intermediate" Scheme.	Private Property.	Unknown.	Unoccupied.
Central, ...	96	10	39	45	2	58	6	—	—	32	49	—	7	8	—
Northern, ...	*75	—	63	2	2	13	22	2	—	38	28	—	—	7	—
Eastern, ...	84	—	77	7	—	23	5	—	—	56	18	—	2	6	2
South-Eastern, ...	186	—	181	5	—	63	88	—	6	29	139	3	8	7	—
South-Western, ...	64	—	41	23	—	54	—	—	—	10	43	4	†6	1	1
	505	10	401	82	4	211	121	2	6	165	277	7	23	29	3

* 8 houses still under consideration (1686 Maryhill Road).

† Includes 2 families in one house.

DETAILED STATEMENT SHOWING FURTHER ACTION TAKEN WITH REGARD TO REPRESENTATIONS
MADE IN YEARS 1929, 1930, AND 1931.

	NUMBER OF HOUSES.						NUMBER OF HOUSES.						FAMILIES REHOUSED—					REMARKS.
	Number of Houses Represented.	Closing Orders.	Demolition Orders.	Not to be used for Human Habitation.	To be Rerendered for Human Habitation.	Closed.	Demolished.	Rerendered Fit and Occupied.	Business Premises.	Still Occupied.	Rehousing Scheme.	Substituted for Families Transferred.	"Intermediate" Scheme.	Private Property.	Unknown.	House unoccupied at time of Representation.		
Properties represented in 1929—																		
Under Sec. 8 of the 1925 Act.																		
1 Rutherford Lane, ...	10	10	—	—	—	10	—	—	—	—	9	—	—	—	1	—	—	
5 Rutherford Lane, ...	8	8	—	—	—	8	—	—	—	—	7	—	—	—	1	—	—	
Under Sec. 16 of the 1930 Act.																		
3 Cadzow Street, ...	7	—	4	3	—	7	—	—	—	—	4	1	—	2	—	—	—	
1624 Maryhill Road, ...	2	—	2	—	—	2	—	—	—	—	1	—	—	—	—	1	—	
Properties represented in 1931—																		
38 Gullane Street (B.L.), ...	7	—	7	—	—	—	7	—	—	—	6	1	—	—	—	—	—	
14 Blackfriars Street (F.L.), ...	19	19	—	—	—	19	—	—	—	—	15	—	—	—	4	—	—	
21 Wellington Lane (F.L.), ...	16	16	—	—	—	—	16	—	—	—	8	3	—	1	4	—	—	
90 Wellington Lane (F.L.), ...	8	—	8	8	—	8	—	—	—	—	5	2	—	—	1	—	—	
10 Renfrew Street (F.L.), ...	12	—	12	—	—	—	8	—	4	—	9	1	—	—	2	—	—	
14, 16 Renfrew Court (F.L.), ...	7	—	7	7	—	7	—	—	—	—	3	—	—	—	4	—	—	
17 Brown Street (F.L.), ...	6	6	—	—	—	—	6	—	—	—	3	—	—	2	1	—	—	
20 Carrick Street (F.L.), ...	21	21	—	—	—	—	21	—	—	—	10	—	—	2	9	—	—	
34 Carrick Street (B. and F.L.), ...	25	—	3	25	—	25	—	—	—	—	22	1	—	2	—	—	—	
21 and 21A Shamrock Street (F.L.), ...	5	—	2	2	—	3	—	2	—	—	2	1	—	—	—	—	Basement houses.	
5 Rosehall Street (F.L.), ...	2	—	2	—	—	1	—	—	—	1	1	—	—	—	—	—	Basement house.	
46 Shamrock Street (F.L.), ...	1	—	1	—	—	1	—	—	—	1	—	—	—	—	—	—	Basement house.	
8 Scotia Street (F.L.), ...	1	—	—	1	—	1	—	—	—	1	—	—	—	—	1	—	Basement house.	
12 Scotia Street (F.L.), ...	5	—	—	5	—	5	—	—	—	—	1	—	—	—	4	—	Basement houses.	
258 Bath Street (F.L.), ...	1	—	1	—	—	1	—	—	—	—	—	—	—	1	—	—	Basement house.	
Blairdardie Cottages, ...	2	—	—	2	—	2	—	—	—	—	—	—	—	1	1	—	Basement house.	
96, 98 Port-Dundas Road (F.L.), ...	2	—	—	2	—	2	—	—	—	—	1	—	—	—	1	—	Basement house.	

DETAILED STATEMENT SHOWING POSITION WITH REGARD TO REPRESENTATIONS
MADE UNDER SECTION 16 DURING 1932.

	NUMBER OF HOUSES.			NUMBER OF HOUSES.			FAMILIES REHOUSED—						REMARKS.				
	Number of Houses Represented.	Closing Orders.	Demolition Orders.	Not to be used for Human Habitation.	To be rendered Fit for Human Habitation.	Closed.	Demolished.	Rendered Fit and Occupied.	Converted into Business Premises.	Still Occupied.	Rehousing Scheme.	Substituted for Families Transferred.		" Intermediate "	Private Property.	Unknown.	House unoccu- pied at time of Representation.
Properties represented in 1932—																	
55, 57, 69 Dalness Street (B.L.), ...	6	—	6	—	—	—	—	—	—	6	—	—	—	—	—	—	—
61, 63, 65, 69 Dalness Street (B.L.), ...	7	—	7	—	—	—	—	—	—	7	—	—	—	—	—	—	—
67 Dalness Street (F.L.), ...	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
321 Westmuir Street (East B.L.), ...	2	—	2	—	—	—	2	—	—	—	2	—	—	—	—	—	—
321 Westmuir Street (West B.L.), ...	3	—	3	—	—	—	3	—	—	—	2	—	—	—	1	—	—
309 Westmuir Street (F.L.), ...	1	—	—	1	—	1	—	—	—	—	1	—	—	—	—	—	—
6, 8 Hart Street (F.L.), ...	2	—	—	2	—	2	—	—	—	—	1	—	—	—	—	—	—
10 Hart Street (F.L.), ...	4	—	—	4	—	4	—	—	—	—	4	—	—	—	—	—	—
106 King Street, (F.L.), ...	1	—	1	—	—	1	—	—	—	—	—	—	—	—	1	—	—
106 King Street (B.L.), ...	16	—	16	—	—	16	—	—	—	—	15	—	—	—	1	—	—
89, 91 Commercial Road (F.L.), ...	44	—	44	—	—	17	—	—	—	27	13	—	—	2	2	—	—
250 Garngadhill (F.L.), ...	2	—	—	—	2	—	—	2	—	—	—	—	—	—	—	—	—
129, 131, 133 King Street (F.L.), ...	11	—	10	1	—	9	—	—	1	1	9	—	—	1	—	—	—
30, 32, 34, 36 Pollok Street (F. and B.L.), ...	13	—	13	—	—	13	—	—	—	—	9	—	2	2	—	—	—
38, 40 Pollok Street (F. and B.L.), ...	15	—	15	—	—	14	—	—	—	1	11	—	2	—	—	1	—
115, 117, 119 King Street (F.L.), ...	4	—	—	4	—	—	—	—	4	—	4	—	—	—	—	—	—
15, 17, 19 Harriet Street (F. and B.L.), ...	26	—	26	—	—	—	26	—	—	—	26	—	—	—	—	—	—
23, 25, 27, 29, 31 Harriet Street (F.L.), ...	8	—	8	—	—	—	8	—	—	—	7	—	—	—	1	—	—
27 Harriet Street (North & South B.L.), ...	14	—	14	—	—	—	14	—	—	—	11	—	—	1	2	—	—
1487 Pollokshaws Road (F.L.), ...	2	—	2	—	—	—	2	—	—	—	1	—	1	—	—	—	—
1487 Pollokshaws Road (West B.L.), ...	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
130, 132, 134 Main Street (F.L.), ...	1	—	1	—	—	1	—	—	—	—	1	—	—	—	—	—	—

DETAILED STATEMENT SHOWING FURTHER ACTION TAKEN WITH REGARD TO REPRESENTATIONS
MADE IN YEARS 1929, 1930 AND 1931.—Continued.

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	NUMBER OF HOUSES.										FAMILIES REHOUSED—							REMARKS.
	Number of Houses Represented.	Closing Orders.	Demolition Orders.	Not to be used for Human Habitation.	To be Rendered Fit for Human Habitation.	Closed.	Demolished.	Rendered Fit and Occupied.	Converted into Business Premises.	Still Occupied.	Rehousing Scheme.	Substituted for Families Transferred.	"Intermediate."	Private Property.	Unknown.	House unoccupied at time of Representation.		
Brought forward, ...	414	10	325	77	2	201	121	2	6	84	268	3	7	23	27	1		
154 Albion Street (Right Stair), ...	1	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—		
289 M Aslin Street (F.L.),...	2	—	2	—	—	2	—	—	—	—	2	—	—	—	—	—		
74 Pollok Street (F.L.), ...	1	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—		
6 Annick Street (First Right Stair), ...	3	—	3	—	—	—	—	—	—	3	—	—	—	—	—	—		
1275 Shetleston Road (F.L.), ...	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
6 Annick Street (F.L.), ...	4	—	4	—	—	2	—	—	—	2	—	—	—	—	1	1		
1281, 1283 Shetleston Road (F.L.), ...	4	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—		
1267 Gallowgate (F.L.), ...	3	—	3	—	—	—	—	—	—	3	—	—	—	—	—	—	Ground-flat houses.	
16 Van Street (F.L.), ...	13	—	13	—	—	—	—	—	—	13	—	—	—	—	—	—	Basement houses.	
1-15 Lyall Place (F.L.), ...	2	—	2	—	—	—	—	—	—	2	—	—	—	—	—	—	Basement houses.	
1, 3 Westerhill Street (F.L.), ...	6	—	6	—	—	4	—	—	—	2	4	—	—	—	—	—	Basement houses.	
188 Stevenson Street (F.L.), ...	3	—	3	—	—	2	—	—	—	2	—	—	—	—	1	1		
65, 67 Green Street (F.L.), ...	2	—	2	—	—	2	—	—	—	2	—	—	—	—	—	—		
69, 71 Green Street (F.L.), ...	12	—	12	—	—	—	—	—	—	12	—	—	—	—	—	—		
132, 134 Drygate (F.L.), ...	2	—	2	—	—	—	—	—	—	2	—	—	—	—	—	—		
165, 167 Old Shetleston Road (F.L.), ...	2	—	2	—	—	—	—	—	—	2	—	—	—	—	—	—	Basement house.	
171, 173 Old Shetleston Road (F.L.), ...	1	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	Basement houses.	
12 Dover Street (F.L.), ...	2	—	2	—	—	—	—	—	—	2	—	—	—	—	—	—	Basement houses.	
36 Pembroke Street (F.L.), ...	2	—	2	—	—	—	—	—	—	2	—	—	—	—	—	—	Basement houses.	
109 Kent Road (F.L.), ...	2	—	2	—	—	—	—	—	—	2	—	—	—	—	—	—	Basement houses.	
103 Kent Road (F.L.), ...	2	—	2	—	—	—	—	—	—	2	—	—	—	—	—	—	Basement houses.	
89 Elderslie Street (F.L.),...	2	—	—	2	—	—	—	—	—	2	—	—	—	—	—	—	Basement houses.	
83 Elderslie Street (F.L.),...	1	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	Basement house.	
2 Blackfriars Street (F.L.), ...	2	—	—	—	2	—	—	—	—	2	—	—	—	—	—	—	*Still under consideration at 20th March, 1933.	
1686 Maryhill Road (Right Stair), ...	8	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—		
122 Main Street (South Stair), ...	7	—	7	—	—	—	—	—	—	7	—	—	—	—	—	—		
122 Main Street (North Stair), ...	5	—	5	—	—	—	—	—	—	5	—	—	—	—	—	—		
186 New City Road (F.L.), ...	1	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	Basement house.	
	505	10	401	82	4	211	121	2	6	165	274	3	7	23	29	3		

CONDITIONS IN REHOUSING SCHEMES.

The following report on conditions in rehousing schemes is by Dr. William C. Gunn, following a series of inspections, along with the nurse-inspectors, of 35 rehousing schemes, during which some 500 houses were visited at random. Dr. Gunn has also completed a booklet descriptive of the life history and habits of the common bed bug and the methods of exterminating this pest. The Department of Health for Scotland have under consideration the publication of this work.

“ With very few exceptions the rehoused tenants are making good use of the houses and maintaining a high standard of house-keeping. During the past two years there has been an undoubted improvement all round, and the really dirty house is most exceptional. On the whole, the smaller schemes are the more successful. Supervision has been most effectively maintained by the nurse-inspectors, and a uniform standard of housekeeping is aimed at.

The furnishing of the houses varies with the income of each family. In some of the houses there are empty rooms which are never used owing to the inability of the tenants to furnish them. In a few instances smaller houses might have been allocated to some of the tenants with no families. In spite of the facilities provided by the kitchenette, there is a common tendency to omit the cooking of a mid-day meal for the family in favour of a later meal in the evening. Gas fires in the bedrooms are not popular owing to the cost of gas, and preference for an open fireplace is often expressed. In some cases the fireclay units have been broken or removed and not replaced. Some tenants complain that with gas fires there is a strong draught which blows down into the room during windy weather when the fire is not in use, and it is common to find newspapers stuffed into the flue to counteract this draught.

Evidence of poverty is frequent in most of the schemes, but there is a universal expression of opinion that the change from the old slum houses has made a great difference to family life in spite of the increased rent which adds to the difficulties of the family budget. In nearly every rehousing scheme there are examples of large families whose economic conditions involve a hard and constant struggle. There were few examples of the really neglected child, those attending school being comfortably clad and shod. Cases of rickets observed among the infants are exceptional. In no case where rickets was observed was the

mother ignorant of the existence of, and the provision made by the Child Welfare Department, with which practically all were in touch.

No great trouble is experienced with lodgers. In most cases where found, these were, or were stated to be, related to the occupier-tenant.

The majority of the tenants are now decorating their walls by painting, although no objection is taken to papering in the case of satisfactory families. The variety of decoration is very striking. The same applies to the furnishing of the houses, and there are many examples of complete suites having been made by the tenants themselves. Throughout the schemes there has been a steady improvement in the care of the plots in front of the ground-flat houses. The asphalted "drying-greens" are the most successful because they are free from accumulations of water, even in wet weather. Those left to grow grass are unattractive and muddy in bad weather.

With regard to vermin infestation, the work of the nurse-inspectors has resulted in a complete absence of the heavily bug-infested house. Infestation is met with from time to time, especially during the warm months of the year, but there are now no intractable examples. In nearly every case the nurse-inspectors observe the presence of bugs at an early stage, when they can be dealt with by the tenants themselves by ordinary methods of cleanliness. This is especially so in the newer housing schemes where the picture rail and skirting board have been abolished. In the older schemes where the picture rail exists and infestation occurs, the rail is removed and not replaced after the house has been disinfested. The City Improvements Department collaborates with the Public Health Department in this suppression of the bed bug. The few samples of infestation found during the present survey mainly originated from bedsteads which were not kept properly, turned over, and cleansed. There is a tendency in many of the houses to overload the open bedsteads with old mattresses, but these are destroyed whenever possible. Bug infestation also arises from old pictures, but this source is much less frequent than formerly. The pictures and furniture are overhauled and cleansed in the old houses before they are transferred to the new one. When this supervision in the old house is carried out thoroughly, and further inspection maintained by the nurse-inspector in the new house, the bug gets very little chance to settle down and multiply in the new environment. If this supervision is properly carried out, there is no

need for an intermediate intensive fumigation of the household goods of the tenant during the removal from the old to the new house. Considerable trouble is met with in some of the schemes in maintaining the cleanliness of closes and walls which are frequently soiled by children with chalks and footballs.

In some of the schemes there are Welfare Committees who arrange outings, dances, and concerts for the tenants. At Hamiltonhill and Haghill some of the tenants are working allotments in the vicinity. Certain of the schemes require very close supervision such as one in Maryhill occupied mainly by tenants from farmed-out houses in Calton, many of whom are of an indifferent and unsatisfactory type.

A special investigation has been carried out during the past year into the progress of the tenants removed from the Calton Slum Clearance Area, and the following is a short note on their present condition in the rehousing schemes to which they have gone. A survey of these tenants was made early in 1932, and another nearly a year later. The table shows the comparison in the state of housekeeping at each of these periods. It will be observed that a very notable improvement has taken place in the interval. All these houses are at present free from vermin, and it should be remembered that over 50 per cent. of the old houses from which the tenants came were heavily infested with bed bugs. Of the 1,041 tenants who were offered new houses, 221 or 21 per cent. did not avail themselves of this opportunity, but went to addresses in old properties."

	Clean.	Very Fair.	Fair.	Dirty.	Bugs Found.	Gone Away.	
						Arrears.	Other Reasons.
First Survey, Spring, 1932, ...	452	28	301	17	18	4	—
Total Houses, 820							
Percentage, ...	55	3	37	2	2	1	—
Second Survey, Spring, 1933, ...	510	84	153	6	—	40	19
Total Houses, 812							
Percentage, ...	63	10	19	1	—	5	2

REHOUSING OF TUBERCULOUS FAMILIES.

By a resolution of the Corporation made in 1929, 10 per cent. of the "Intermediate" houses were set aside for families where a tuberculous individual lives under overcrowded conditions. The allocation of the houses is made by the General Manager, City Improvements Department, on the recommendation of the Medical Officer of Health, and the following table shows the

position at 31st December, 1932, of the applications recommended since the inception of the scheme :—

Recommendations, ...	Year Recommended.			Total.
	1929/31.	1932.		
1. <i>Rehoused</i> , ...	1,116	270		1,386
2. <i>No further action to be taken</i> —	292	23		315
Income over "Intermediate" scale and refuse ordinary Corporation house, ...	4	—		4
Not eligible for "Intermediate" and refuse ordinary Corporation house, ...	1	—		1
Left Glasgow, ...	7	—		7
Do not now wish rehoused, ...	24	—		24
Patient dead, ...	36	—		36
City Improvements Dept. report they will take no further action, ...	8	—		8
No tuberculous patient in family, ...	2	—		2
Rehoused in non-Corporation houses on own account, ...	55	—		55
	137	—		137
3. <i>Cannot afford "Intermediate" rentals</i> —				
Waiting for Slum Clearance Houses by substitution, ...	46	—		46
Cannot pay rental of scheme desired, ...	1	—		1
Cannot afford "Intermediate" rentals, ...	102	2		104
Wish application held over meantime, ...	45	—		45
Unsatisfactory reference, ...	25	—		25
Will only take house which does not relieve overcrowding, ...	14	—		14
	233	2		235
4. <i>Position uncertain</i> —				
City Improvements Department still to report, ...	65	240		305
No reply to p.c. from City Improvements Department, ...	53	1		54
Gone away and cannot be traced, ...	24	—		24
	142	241		383
5. <i>Waiting for Rehousing</i> —				
Waiting for particular schemes, ...	216	2		218
Overcrowding not serious—not urgent, ...	18	—		18
Waiting, ...	78	2		80
	312	4		316

SUMMARY OF FAMILIES REHOUSED AT 31ST DECEMBER, 1932.

Year Recommended.	Rehoused during				
	1929	1930	1931	1932	Total
1929, ...	68	40	25	5	138
1930, ...	—	22	49	13	84
1931, ...	—	—	26	44	70
1932, ...	—	—	—	23	23
	68	62	100	85	315

SLUM CLEARANCE AND REHOUSING.

The following summary shows the position of the various schemes as at the end of 1932:—

	NUMBER OF HOUSES.				Total Houses in Scheme.
	Demolished.	Converted to Business Premises.	Closed.	Still Occupied.	
Parliamentary Road Scheme,	121	—	—	—	121
1923 Scheme, ...	1,858	—	—	—	1,858
1926 "	1,052	—	—	—	1,052
1927 "	1,019	—	—	—	1,019
1928 "	1,065	10	31	—	1,106
1930 "	1,216	—	68	4	1,288
Old Shettleston Road Scheme,	1	—	1	129	131
	6,332	10	100	133	6,575

Further details for schemes which were not completed at the end of 1931 are given in the following notes:—

(a) THE GLASGOW IMPROVEMENT SCHEME, 1928.—The thirty-one houses shown as closed in the above table are part of thirty-eight houses which the Local Authority agreed to allow the owners to retain on the conditions (1) that the buildings were not to be utilised for the purposes of dwelling accommodation; and (2) that, in the event of the owners demolishing the buildings and clearing the site for further development, a strip of ground was to be given off to the Corporation for the purposes of road widening.

(b) THE GLASGOW (CALTON) IMPROVEMENT SCHEME, 1930.—At the end of the year, only four houses were still occupied.

Houses closed or unoccupied at commencement of Scheme—					1 Apt.	2 Apts.	3 Apts.	4 Apts.	Total.
Number demolished during 1931, ...					1	—	—	—	1
Houses in occupation at commencement of Scheme—									
Number closed and demolished prior to 31st Dec., 1931, ...					217	209	32	—	458
„	„	in 1931 and demolished during 1932, ...			172	216	11	—	399
„	„	in 1932 and demolished during 1932, ...			184	158	14	2	358
					573	583	57	2	1,215
„	„	in 1931 and not demolished at 31st Dec., 1932, ...			10	6	—	—	16
„	„	in 1932 and not demolished at 31st Dec., 1932, ...			22	27	3	—	52
					32	33	3	—	68
Number still in occupation at 31st Dec., 1932, ...					—	2	1	1	4
Total houses in Scheme, ...					606	618	61	3	1,288

Number of Families—

Transferred to Rehousing Schemes—

Prior to 31st Dec., 1931, ...	633
During 1932,... ..	255
“ Substituted ” and transferred to Rehousing Schemes—	
Prior to 31st Dec., 1931, ...	135
During 1932,... ..	80
Removed voluntarily, &c.—	
Prior to 31st Dec., 1931, ...	141
During 1932,... ..	91
Still to be provided for at 31st Dec., 1932, ...	5

1,340

(c) OLD SHETTLESTON ROAD CLEARANCE AREA.—The clearance resolution for this Scheme was passed by the Corporation in October, 1931. The Scheme includes 50 houses of one apartment, 73 of two apartments, 2 of three apartments, and 6 of four apartments or over; in all, 131 houses. At the end of 1932, two families had been rehoused.

CONDITIONS IN SLUM CLEARANCE REHOUSING SCHEMES.

The Department undertakes, through specially delegated lady inspectors, the functions of routine inspection, assistance, advice, and general supervision of the families in the rehousing schemes who have been transferred from slum areas, for the purpose of maintaining standards of occupancy at the highest possible level. Regular visits are made and the condition of each house at the time of visit is noted. Houses in the clean class are visited once every three months, while others are visited at least every month.

The following statement indicates the number of families under supervision and the movement among the tenants during the year :—

Number of tenants in occupation at 31st December, 1931, in schemes included in Annual Report for 1931,... ..	5,556
Number of tenants in occupation at 31st December, 1931, in schemes which were filling up or had been occupied for a short time only prior to the end of that year,... ..	116
Total number of tenants in occupation at 31st December, 1931, ...	5672
Number of tenants obtaining entry during 1932 (transfers excluded), ...	882
Number of tenants evicted or left owing rent during 1932, ...	201
Number of tenants removed voluntarily during 1932 (transfers excluded), ...	147
	348
	534
Number of tenants in occupation at 31st December, 1932 (schemes filling up or occupied for a short time only excluded),... ..	6,206

Of these 6,206 houses, 4,621 were classed as clean, 1,514 as fair, and 71 as dirty, representing 74·5 per cent., 24·4 per cent., and 1·1 per cent. respectively of the total. The corresponding percentages for occupancies as at the end of 1931 were 71·1 per cent., 26·5 per cent., and 2·4 per cent.

Of the 6,206 tenants in occupation at the end of the year, 5,371 had held tenancy during the full year, while 835 obtained entry during the year.

In the following table a comparison is made of the condition of the houses at the beginning and end of the year for the 5,371 families who had been under supervision for at least one year:—

		Condition at end of Year.			Totals.	Group Percentage.
		Clean.	Fair.	Dirty.		
Condition at beginning of Year.	{ Clean, ...	3,766	102	—	3,868	72·0
	{ Fair, ...	404	988	2	1,394	26·0
	{ Dirty, ...	6	48	55	109	2·0
Totals, ...		4,176	1,138	57	5,371	100·0
Group percentage, ...		77·7	21·2	1·1	100·0	—

It will be noted that among this group the number of "clean" houses increased during the year from 3,868 to 4,176, while the number of "fair" houses decreased from 1,394 to 1,138; "dirty" houses were only 57 against 109 at the beginning of the year. 404 "fair" and 6 "dirty" had progressed sufficiently during the year to be classified as "clean," and 48 "dirty" to be classified as "fair." On the other hand, 102 tenants classified as "clean" at the beginning of the year were transferred to the "fair" category and 2 "fair" to the "dirty" category. The remainder, 3,766 "clean," 988 "fair," and 55 "dirty," showed no change.

Similar information is given for the 835 tenants who obtained entry during the year and who were still in occupancy at the end of it, and in respect of whom supervision was of shorter duration than that for the preceding group.

		Condition at end of Year.			Totals.	Group Percentage.
		Clean.	Fair.	Dirty.		
Condition at date of entry.	{ Clean, ...	355	26	—	381	45·6
	{ Fair, ...	83	332	—	415	49·7
	{ Dirty, ...	7	18	14	39	4·7
Totals, ...		445	376	14	835	100·0
Group percentage, ...		53·3	45·0	1·7	100·0	—

While a certain degree of improvement is to be noted in this group, the standard falls short of the standard reached by tenants in residence for the full year—53·3 per cent. as against 77·7 per cent. “clean,” 45·0 per cent. as against 21·2 per cent. “fair,” and 1·7 per cent. as against 1·1 per cent. “dirty.”

The following table gives the condition prior to removal of the houses occupied by tenants who were evicted or left owing rent and by tenants removing voluntarily:—

		Tenants evicted during 1932.		Tenants removing voluntarily during 1932	
		Number.	Group Percentage.	Number.	Group Percentage.
Condition at date of removal.	{ Clean, ...	76	37·8	100	68·0
	{ Fair, ...	104	51·7	44	29·9
	{ Dirty, ...	21	10·5	3	2·1
		201	100·0	147	100·0

As noted in previous years the cleanliness of the evicted tenants is much below the average, although the condition of the houses of the tenants who remove voluntarily compares favourably with the average.

RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACTS, 1920 AND 1923.

Applications for Certificates by Tenants.—During the year 233 applications for certificates in terms of Section 2 (2) of the principal Act, were received, compared with 225 for 1931. Of these, 12 were refused and 221 granted, 126 of the latter being in respect that the houses affected were not in all respects reasonably fit for human habitation, and 95 in respect that the houses were not in a reasonable state of repair.

At a meeting of the Sub-Committee on Insanitary Areas on the 22nd August, 1932, it was resolved that in future, as regards houses which have “irremediable defects” certificates be not issued, but that the necessary procedure be taken under Section 16 of the Housing (Scotland) Act, 1930, to have such houses closed.

The following summary shows the distribution of the applications throughout the several administrative divisions, and gives comparative figures for each year since the Act came into operation:—

GLASGOW, 1932.—APPLICATIONS FOR CERTIFICATES UNDER SECTION 16 (2) OF THE INCREASE OF RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1920.

Division.	Refused.	Granted in respect that Houses were—	
		(1) Not in all respects reasonably fit for human habitation.	(2) Not in a reasonable state of repair.
Central, ...	1	—	2
Northern, ...	2	15	12
Eastern, ...	8	78	66
South-Eastern, ...	—	32	10
South-Western, ...	1	1	5
City, ...	12	126	95
		221	
1920 (Oct. to Dec.),	147	263	459
1921-1925, ...	219	434	653
1926-1930, ...	29	200	229
1931, ...	6	121	98
1932, ...	12	126	95

Applications for Reports by House Factors and Owners.—In Section 5 (2) of the 1923 Act it is provided that where a certificate has been issued by the Sanitary Authority in accordance with the provisions of Section 2 (2) of the principal Act of 1920, and the house factor or owner afterwards executes the repairs required to put the houses into a reasonable state of repair, he shall be entitled to receive a report to that effect on making application to the Sanitary Authority, and on payment of a fee of one shilling. During the year 37 applications were received, of which 36 were granted and 1 was refused.

The following summary shows the distribution of the applications throughout the several administrative divisions, and gives comparative figures for previous years:—

GLASGOW, 1932.—APPLICATIONS FOR REPORTS BY HOUSE FACTORS OR OWNERS UNDER SECTION 5 (2) RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1923.

Division.	Granted.	Applications.	
		Refused.	
Central, ...	—	—	
Northern, ...	8	1	
Eastern, ...	26	—	
South-Eastern, ...	1	—	
South-Western, ...	1	—	
	36	1	
	37		
1923-1925, ...	40	1	
1926-1930, ...	6	2	
1931, ...	6	1	
1932, ...	36	1	

SECTION IX.

BACTERIOLOGICAL LABORATORY.

Report by Dr. W. R. WISEMAN, City Bacteriologist.

The work completed in the laboratory in 1932 again shows an increase in amount over previous years, the total number of specimens submitted and reported upon being 41,558. The rate of increase in the demands for the services of the laboratory is seen at a glance by comparing the totals for the years 1929 and 1926, viz., 33,934 and 31,086. The variety of it may best be illustrated by viewing the work as a whole as falling into the following groups:—

(1) *Specimens from Cases of Suspected Infectious Disease.*—These are submitted for the definite purpose of confirming or ruling out as far as possible the presence of some disease that is named. They comprise the bulk of the routine work which deals with pulmonary and other forms of tuberculosis, diphtheria, enterica fevers, dysentery (bacillary and amœbic), venereal diseases, ophthalmia neonatorum, scarlet and puerperal fever, tubercular and other forms of meningitis, pneumonia, anthrax, plague (in rats), and undulant fever. Investigations in connection with contacts and sources of infection in epidemic outbreaks also form part of the routine work.

(2) *Miscellaneous Investigations.*—Work in this category includes such examinations as (a) scrutiny of the cellular content of the blood; (b) intestinal contents when no particular disease can be specified; (c) urine for evidence of diseases of microbic origin other than enterica; (d) foodstuffs as to fitness for consumption or in connection with illness suspected to be related to their consumption, and cases of illness connected therewith; (e) hair and skin for parasites; (f) tumours for malignancy and other tissues for report upon changes in structure; (g) investigation of obscure cases generally.

(3) As a routine practice, the water supply of the city is tested at regular intervals with regard to the maintenance of its standard of purity and freedom from harmful contamination. The samples are taken from distributing pipes and also from the Gorbals, Mugdock, and Craigmaddie Reservoirs. The bacterial content of the water in the ponds of the public baths is also examined at regular intervals, an indication being thus obtained of the efficiency of the filtering plants. The examination of the milk supply of the City and the city's hospitals constitutes a considerable part of the routine work of the laboratory. The supplies are tested in regard to bacterial content as a measure of purity and in regard to tuberculous infection.

(4) *Biological Tests.*—These tests are an essential part of the procedure in examining milk for the presence of the tubercle bacillus, and are commonly used for the detection of this organism in pleural and cerebro-spinal fluids, sputum, and urine. They are employed to distinguish the bovine from the human type of tubercle bacillus and to ascertain the type of infecting organism in cases of pneumonia. By means of them we ascertain the virulence or otherwise of organisms isolated from diphtheria patients, carriers, and contacts, and make the diagnosis of certain infections such as anthrax, infective jaundice, &c.

DIPHTHERIA.

It is a laboratory arrangement that every practitioner in the city may be in possession of a complete diphtheria outfit, and that a fresh outfit is sent out along with every report. All reports are based upon microscopical examination of the cultures obtained from the swabs submitted. All results are conveyed by telephone on the morning after the swabs are received, this being followed up by the sending out of a written record of the examination.

During the year 9,629 swabs were examined for the presence of the diphtheria bacillus, and were derived from suspected cases, from contacts, and from children as a preliminary to admission to the Corporation Country Homes.

(1) *Suspected Cases.*—7,812 swabs were reported upon, 1,099 being positive, or 14 per cent. This compares with 14·6 per cent. positives in 1931 and 15·2 per cent. in 1930.

(2) *Contacts.*—1,168 contacts were examined, and yielded 65 positives, or 5·6 per cent.

(3) *Pre-Admission Examinations.*—532 throat swabs were examined for the Health Department from 532 children. Five of these contained diphtheria-like organisms, but only one contained virulent diphtheria bacilli. Of 117 swabs (64 throat and 53 nasal) submitted by practitioners from 64 children, none contained virulent bacilli. We have, then, 1 case of a virulent organism among 596 children, i.e., in 0.16 per cent. The occurrence of virulent diphtheria bacilli in the throats of those children as representative of the general population of young people who are not suspected contacts is instructive, and is as follows for three consecutive years:—

			Number of Children.	Virulent <i>B. diphtheriæ</i> .	Per cent. virulence.
1930,	...	...	554	1	0.18
1931,	...	...	528	1	0.18
1932,	...	...	596	1	0.16

These figures refer, as stated, to throat examinations. The case encountered in 1932 yielded the organism on only one occasion among several examinations.

Biological and Cultural Tests.—These were tests for virulence and for identity of organism which in each case resembled the diphtheria bacillus on culture. The virulence tests were intra-dermal or subcutaneous in the guinea-pig, and were done closely in accordance with technique commended in the monograph "Diphtheria" issued by the Medical Research Council. Organisms resembling *B. diphtheriæ* were isolated from 159 swabs, and 130 of these, proving to be true *B. diphtheriæ*, were subjected to animal experiment to determine virulence. The sources and results were as follows:—

			Number tested.	Virulent.	Non-Virulent.
(a) Throat swabs,	...	...	45	29	16
(b) Nasal swabs,	...	...	66	47	19
(c) Ear swabs, ...	...	...	39	14	25
(d) Finger swab,	...	...	1	1	—
(e) Eye swab, ...	...	...	1	—	1
(f) Vaginal swab,	...	...	1	1	—
(g) Pre-admission swabs,	...	...	6	1	5
			159	93	66

The identity and source of the 66 non-virulent organisms are given in the following table:—

			<i>B. diphtheriæ</i> .	<i>B. hofmanni</i> .	<i>B. xerosis</i> .	Total.
Throat,	...	...	13	1	2	16
Nose, ...	...	...	9	5	5	19
Ear, ...	...	...	11	3	11	25
Eye, ...	...	...	1	—	—	1
Pre-admission,	...	...	3	1	1	5
			37	10	19	66

12 of the total 159 were second swabs which had been required for successful isolation of the organisms.

The "Finger" Case.—This case resulted from a cut of a finger produced by a toy which belonged to a brother who was actually at the time in hospital with diphtheria.

Ear Cases.—The observations upon discharges from the ear, with special reference to the occurrence of the diphtheria bacillus which were commenced in 1930, were continued during 1932. This organism was cultivated on 25 occasions from 39 swabs, and, as shown in the table, virulence was proved in 14 instances. These 14 were hospital patients, 10 of whom were suffering from scarlet fever, 2 from measles and pneumonia, and 2 were cases of faucial diphtheria.

ENTERICA GROUP.

Examination of Blood.—Agglutination tests for the diagnosis of typhoid and paratyphoid fever were done with 303 specimens of blood from 292 persons. Positive results for typhoid infection were given with 14 specimens, 2 of which were from contacts, while 15 positive results from 13 cases were diagnostic of paratyphoid B infection, no contact being positive. In 28 instances doubtful results were obtained, being due in most cases to the fact that reactions to more than one organism were obtained, indicating previous anti-enterica inoculation. These last cases were possibly cleared up by other methods. The use of the capillary tube in submitting specimens, even when used only for the typhoid reaction, is apt to produce doubtful results, and its use during the year still existed to the extent of 9 per cent. of the specimens.

Sources of Material and Results in Blood Tests.—

	Positive typhoid.	Positive para. B.	Doubtful.	Negative.	Total.
Cases of illness, ...	12	15	28	194	249
Contacts, ...	2	—	—	52	54
	<u>14</u>	<u>15</u>	<u>28</u>	<u>246</u>	<u>303</u>

Many of these examinations are made for the satisfaction of excluding enterica infection.

Examination of Excretions.—The total number of examinations from all sources—cases, contacts, and convalescents—was 1,117 (fæces, 565; urines, 552). Of this total there were 353 repeat examinations (fæces, 187; urines, 166), and the total also includes 313 specimens of urine and fæces from contacts.

B. typhosus was isolated on 43 occasions from 26 cases, and *B. paratyphosus B* on 50 occasions from 17 cases. Most of these isolations were made from stools. A typhoid and a paratyphoid carrier were involved in these examinations, the former clearing up during the year, while the paratyphoid carrier referred to in last year's Report still continues positive.

With regard to contacts, *B. typhosus* was found in 9 specimens of faeces and 2 of urine; 1 urine yielded the paratyphoid B bacillus.

No outbreak of typhoid or paratyphoid fever occurred during the year.

As in immediately preceding years, a survey of a number of patients in Hawkhead Mental Hospital was carried out with regard to typhoid infection (see previous Reports). The patients examined had each three specimens of faeces and of urine examined in 1931, with negative results. Forty-two persons were examined this year in the same manner, and the results were again negative.

DYSENTERY AND FOOD POISONING.

Dysentery. — The large number of examinations of faecal excreta appearing under this head is due to the fact that not infrequently specimens were submitted for "dysentery and enterica group" infections. To avoid duplication under two headings, these specimens are placed here when they are negative for the enterica group, because examinations for evidence of dysentery usually entail microscopical work in addition to examination by culture. It is stated in the reports whether the specimens are microscopically dysenteric in character or not, and, when present, the dysenteric elements are named. In the course of the year material was submitted from 445 persons, and the number of examinations made was 662, including the usual repeated specimens for clearance. None of the cases became a carrier, dysentery organisms not being found more than three times in any one case before becoming negative. The sources of the material and the findings are seen in the following table:—

	B. Flexner.	B. Sonne.	E. histolytica.	Total.
Practitioners, ...	11	7	1	78
M.O.H. (suspected cases),	13	9	1	103
M.O.H. (contacts), ...	20	1	—	182
Corporation hospitals, ...	30	8	1	299
	74	25	3	662
Total for 1931, ...	46	9	4	378

The 74 Flexner results were from 64 cases, and the 25 Sonnes from 23 cases. There was no outbreak of large dimension during the year, most of the cases occurring in widely-scattered areas of the city. Four Sonne infections were found in a condemned property where a case of paratyphoid fever had occurred, and a series of mild illnesses suspected clinically of being dysenteric in nature occurred at intervals in a ward in the Western District Hospital. The specimens from these ward patients, with one possible exception, did not suggest dysentery, though Flexner's bacillus was found in one case out of 39 specimens from suspected cases and healthy contacts. Agglutination tests of 29 specimens of blood from persons in this ward did not lead to any additional positive result.

Food Poisoning.—Samples of various kinds of foodstuffs were submitted for examination either as to their fitness for consumption or as being suspected sources of illness. They included such materials as pork pie, ham, cooked beef, margarine, and shellfish. With regard to the illnesses that were investigated, 61 specimens were submitted from 47 patients, the following table showing the materials examined and findings:—

	Total.	Food poisoning organisms.	Repeat positive.
Fæces, ...	51	9	2
Urine, ...	7	2	—
Vomit, ...	2	1	—
Pus, ...	1	1	—

The occurrences of these organisms were briefly as follows:—

(1) Three persons in one family were affected, and the causative organism was found in 4 specimens of fæces and 1 of vomitus. This organism was a typical food-poisoning bacillus closely resembling *Salmonella newport* (Schütze). No particular foodstuff could be definitely suspected, and negative results were obtained in examinations of ham, margarine, and condensed milk.

(2) in another family the consumption of mutton was alleged to be concerned in five cases of illness, but none of it could be obtained for examination. Two persons who had no mutton showed no symptoms. Five persons ate the mutton, three of whom, though having been ill, were bacteriologically negative. Two of the patients were admitted to a Corporation general hospital, and from specimens submitted the illnesses were found to be due to a food-poisoning organism, *Salmonella enteritidis* (Gærtner). This organism was found in the fæces and the urine of both cases.

(3) Two isolated cases of infection with *Salmonella enteritidis* (Gærtner) provide a good illustration of the different course of illness to which certain strains of this organism give rise.

(a) In the one case the onset was sudden, the gastro-intestinal

symptoms acute, and the patient very ill on admission to hospital. The organism was cultivated twice from this case, but disappeared at the end of the second week. (b) This case was one in which the onset and course resembled those of one of the enterica fevers. The reaction given by the blood serum in the test for paratyphoid fever done in hospital was rather deceptive, for the actual cause was proved to be the above organism when the patient was convalescent, prior to dismissal from hospital. This case ran a febrile course for 30 days. A note upon a similar case was made in my report for 1930.

(4) In association with ordinary pus-forming organisms, a bacillus of the *Salmonella* group was cultivated from pus taken from the chest of a boy suffering from empyema. This bacillus was possibly of food-poisoning type, as *para B.*, *certrycke*, and *enteritidis* (Gärtner) sera gave no reaction with the organism, while *Salmonella newport* serum gave agglutination in high dilution. Its identity was not fixed, however, and no evidence could be gathered to account for its presence.

Outbreaks of gastro-intestinal illness in Robroyston Hospital and in the Glasgow Maternity Hospital were investigated in the laboratory during the year. The former was limited and mild in type and cleared up quickly. In the latter hospital different groups of the staff were involved at different times. The stools of three typical cases and of nine members of the kitchen staff did not show anything abnormal microscopically, nor was any specific cause established by cultural methods.

VENEREAL DISEASES.

During the year under review the number of specimens examined in connection with Venereal Diseases totalled 18,855, an increase of 1,719 over the year 1931. This number includes 11,713 subjected to the Wassermann Test and 5,996 to the Kahn Flocculation Test.

Wassermann Test.—This test is used for specimens from suspected cases of syphilis, and since 1921, the method of performing the Wassermann Test used in this laboratory was that known as the Harrison Method, or Method No. 1 of the Medical Research Council's Report. Modifications in this method have been introduced by Dr. E. J. Wyler of the Ministry of Health with a view to improving the technique and increasing the sensitiveness of the test without impairing its specificity. These modifications were embodied in Special Reports, the first issued by the Medical Research Council in 1929, and known as No. 1 Method M.R.C. (Modified), and the second issued by the Ministry of Health in the present year, 1932. Experience in the use of

the first of these modifications led on to the adoption of the second, which is the method now in use in the laboratory. Its essential feature is the use of an increase in the amount of the patient's serum to be tested, this increase being fixed by an alteration in the dilution of the serum. It has been found in the laboratory that the use of this latest method of performing the test has substantiated Wyler's claim that fewer results are reported as "doubtful" than with methods previously in use, many "doubtfuls" becoming definitely negative or positive.

Of these 11,713 specimens subjected to the Wassermann Test, 337 were specimens of cerebro-spinal fluids, the rest being specimens of blood.

In addition to the foregoing, a certain number of specimens reached the laboratory which could not be reported upon owing to such causes as hæmolysis (26), insufficient serum (44), and anti-complementary action of the serum (8). Five patients attended the laboratory to have blood withdrawn for the test.

The sources of specimens were as follows:—

Public Health Department, ...	5,474
Medical Practitioners of the City, ...	1,548
Outside Local Authorities, ...	1,090
Local Hospitals and Institutions, ...	3,601
	11,713

4,678 specimens were from patients under treatment, 46·1 per cent. giving positive reactions; 7,035 specimens submitted for diagnosis yielded 19·9 per cent. positives, but this group includes specimens from non-suspected cases which were examined rather as a routine process of exclusion.

Kahn Test.—The Kahn Test was performed on specimens taken as a routine from patients attending Ante-natal Clinics, the Clinic for the Blind, the Venereal Diseases Dispensaries for the treatment of gonorrhœa only, the Maternity Ward of the Southern General Hospital, and from other sources. All of these showed no clinical evidence of syphilis. During the year 5,996 specimens of blood came under this test—3,811 from ante-natal patients, with a positive percentage of 3·6; 589 from persons attending the Clinic for the Blind, with a positive percentage of 9·5; 1,243 from gonorrhœa cases, with 6·3 per cent. positive; and 312 from hospitals and other sources. These positive percentages refer to results where the Kahn and Wassermann reactions confirm one another, but it is not known precisely to what extent these percentages are affected by the submission of specimens duplicated for result of treatment. The duplication of tests so performed is not shown in the figures of this report.

Microscopical Examination for Treponema pallidum (V.D.S.).
—During the year examinations were made of 12 specimens for the presence of this organism, one of which was positive. Considerable care is necessary on the part of the practitioner in preparing specimens for this examination.

Microscopical Examination for Gonococcus (V.D.G.).—Examinations of specimens numbering 1,134 were made for the gonococcus from cases other than ophthalmia neonatorum. The specimens for diagnosis gave a positive percentage of 17·9, while those from patients undergoing treatment gave a corresponding figure of 8·8.

A table showing in detail the sources of the above specimens is set out below:—

	Wassermann Test.	Kahn Test.	V.D.G. micros.	V.D.S. micros.	Total.
<i>I. Public Health Department—</i>					
Blind Clinic, Tuberculosis Dispensary,	120	589	—	—	709
V.D. Dispensaries (five), ...	3,763	1,277	54	—	5,094
Ante-natal Clinics (nine), ...	522	3,811	379	—	4,712
Hospitals, Fever (six), ...	243	113	87	1	444
„ General (two), ...	826	199	1	—	1,026
	5,474	5,989	521	1	11,985
<i>II. Medical Practitioners—</i>					
(a) City of Glasgow, ...	1,548	7	588	11	2,154
(b) Other Local Authorities, ...	1,090	—	20	—	1,110
	2,638	7	608	11	3,264
<i>III. Local Institutions—</i>					
Lock Hospital, ...	931	—	2	—	933
Ear, Nose, & Throat Hospital, ...	158	—	—	—	158
Samaritan Hospital, ...	53	—	—	—	53
Cancer Hospital, ...	64	—	—	—	64
Redlands & Elder Hospitals, ...	10	—	2	—	12
Homœopathic Hospital and Central Dispensary, ...	8	—	1	—	9
Sick Children's Hospital, ...	289	—	—	—	289
Sick Children's Dispensary, ...	440	—	—	—	440
Bellahouston Dispensary (Victoria Infirmary), ...	130	—	—	—	130
Glasgow Eye Infirmary, ...	1,450	—	—	—	1,450
Victoria Infirmary, ...	1	—	—	—	1
West of Scotland Research Institute,	67	—	—	—	67
	3,601	—	5	—	3,606
Total, ...	11,713	5,996	1,134	12	18,855

OPHTHALMIA NEONATORUM.

Specimens of exudate from the eyes of 1,058 suspected cases of ophthalmia neonatorum were examined for the Child Welfare Centres, &c. There were also 29 specimens received with insufficient material for examination. Since repeated examinations are occasionally made to test the results of treatment, the

number stated does not wholly correspond to the actual number of patients.

Specimens from.	Number.	Positive.
Medical Practitioners, ...	9	—
Medical Officer of Health, ...	1,045	72
Outside Authorities, ...	4	—
	1,058	72

The positive results refer to the presence of the gonococcus.

It is the practice of the laboratory to name or describe, as far as possible, the organisms microscopically observed in these specimens, in order to assist the clinician in correlating different types of ophthalmia.

STREPTOCOCCAL INFECTIONS.

SCARLET FEVER, &C.

The establishment of the relation between certain types of streptococci (those with hæmolytic among other properties) and cases of scarlet fever, puerperal fever, septic sore throat, &c., has rendered the detection of these organisms important from the public health standpoint, as it is necessary to determine, as far as possible, their dissemination in connection with such cases. Thus, 120 swabs of the throat and nose of scarlet fever contacts were reported upon, in addition to 30 specimens of material from miscellaneous diseases, e.g., mastoiditis and otitis media. 45 of that total were reported positive. In connection with puerperal fever, 30 cultures of blood and of swabs were carried out, with 6 positive results. The sources of the specimens were as follows :—

	Health Dept.	Medical Practs.	Ear, Nose, & Throat Hosp.	Outside Authorities.
Scarlet Fever, &c., ...	118	19	10	3
Puerperal Fever, ...	9	—	—	21
	127	19	10	24

A variety of technique has been employed in different centres in carrying out tests for hæmolysis, and considerable attention has been directed in this laboratory upon the various methods with a view to efficiency in this matter.

ANTHRAX.

Samples of goatskin thongs used as binding for orange boxes were examined for anthrax. In previous years such material was not infrequently found to be infected with this organism. 22 of these samples and 4 samples of salted hides were examined biologically, with negative results. No case of this disease came to the notice of the laboratory during the year.

PLAGUE.

This disease being usually acquired from the bite of a flea which has previously fed on a plague-infected rat, the examination of rats from ships and from the harbour continues to form a routine part of the laboratory work. During the year 277 rats were examined for evidence of plague, with negative results. The species of rats examined were *Mus decumanus* (74), *Mus rattus* (104), *Mus alexandrinus* (99). The proportion of males to females was as 115 to 162.

MILK SUPPLY.

I.—IN RELATION TO BOVINE TUBERCULOSIS.

All reports as to whether samples of milk contain tubercle bacilli are based on the results of biological tests. The total number of samples reported on during the year was 1,160, and the following are the results obtained:—

	Samples.	Tuberculous.	% Tuberculous.
1. <i>Milk from Town Cows</i> —			
Submitted by the Veterinary Surgeon,	75	7	9.3
2. <i>City Milk Supply</i> —			
Obtained by milk and dairy inspectors at consignees' premises—			
(a) Raw and Retailed Milks, ...	408	36	8.8
(b) Pasteurised Milk, ...	209	3	1.4
Included in these are 33 samples of the milk supplied to the Child Welfare Centres, none of which was found to be tuberculous.			
3. <i>Hospital Milk Supply</i> —			
These are all Grade A (T.T.) Milks.	213	1	0.46
4. <i>Other Local Authorities</i> , ...	255	30	11.76

The large number of city milks is due to the fact that the special Scottish investigation into the presence of tubercle bacilli in milk was not completed till May, 1932.

Certain features of the pasteurising plants and processes concerned with the three pasteurised samples which gave positive results were as follows. One sample was treated in a positive holder, but the duration was only 20 minutes. The second sample was flash pasteurised at 150°F. The third sample was treated in a positive holder of a different type from the first, and this machine was found to have defective valves.

II.—IN RELATION TO BACTERIAL CONTENT.

City Milks.—Milks coming into the city are examined for the number of bacteria they contain per unit volume of one cubic centimetre. They are sampled mainly at consignees' premises. During the year 277 samples were estimated in this way in the laboratory, as against 206 in the previous year. The results

obtained in 1932 and in the previous year may be placed together for comparison, as follows:—

	Number examined.	Samples below maximum of Certified Milk (30,000 per c.c.).	Samples below maximum of Grade A Milk. (200,000 per c.c.).	Samples above 200,000 per c.c.
1931, ...	206	74 (36%)	91 (44%)	41 (20%)
1932, ...	277	74 (27%)	121 (44%)	82 (29%)

The actual averages of bacterial counts of samples of city milks in 1932 are presented in the following table as indicating degrees of purity of production.

Total number of samples examined=277.

Maximum counts at 37°C. of designated milks (given as a basis for comparison).	Average counts at 37°C. and number of samples involved.
Below 30,000 per c.c. (Certified),	16,800 per c.c. for 74 samples=27%
Below 200,000 per c.c. (Grade A),	87,200 per c.c. for 121 samples=44%
	326,800 per c.c. for 30 samples=10·5%
	733,300 per c.c. for 16 samples= 5·5%
Above 200,000 per c.c. ...	{ Over a million per c.c. for 36 samples=13%

Thus 71 per cent. of the supplies are of Grade A or Certified standard as to count, as compared with 80 per cent. in 1931.

Child Welfare Milk.—50 samples of milk supplied to Child Welfare Centres were examined at weekly intervals. In two cases only did the bacterial count exceed that allowed for pasteurised milk (viz., 100,000 per c.c.). The average count for 50 samples was 23,100 per c.c.

Hospital Milks.—The city hospitals are supplied with milk designated as Grade A (T.T.). Estimations of the bacterial content are made fortnightly for ten hospitals. The average counts for eight of these hospitals fall well within the 200,000 mark allowed for milk of the grade supplied. In the case of each of the other two hospitals, two samples giving extremely high counts raised the average counts above the maximum allowed for Grade A milk. Otherwise the counts were highly satisfactory.

Designated Milk.—In addition to the samples already dealt with, 369 samples of designated or graded milks were examined for the Health Department. Of these, 347 were found to give less than the maximum count for their grade, while 22 exceeded it. The details are subjoined:—

	Samples.	Within maximum count.	Over maximum count.
Certified, ...	100	90	10
Grade A (Pasteurised),	26	26	—
Pasteurised, ...	40	39	1
Grade A, ...	12	11	1
Grade A (T.T.), ...	191	181	10
	369	347	22 (6%)
1931, ...	309	297	12 (4%)

The relative maximum bacterial counts for these grades are appended:—Certified and Grade A (Pasteurised), each 30,000 per c.c.; Grade A and Grade A (T.T.), each 200,000 per c.c.; Pasteurised, 100,000 per c.c.

LOCH KATRINE WATER SUPPLY.

Four samples from Craigmaddie, Mugdock, and Gorbals Reservoirs and two from the tap are examined every month as to purity and bacterial content. The bacterial content remains fairly constant. The following are the quarterly averages for 1932:—

	Average Count on agar per c.c.	Average Count on gelatin per c.c.
January—March, ...	9	83
April—June, ...	5	45
July—September, ...	7	42
October—December, ...	9	62

B. coli communis was absent in 10 c.c. of the tap water throughout the year.

HISTOLOGICAL EXAMINATION OF TISSUES.

Specimens of tissue are submitted for report upon changes of structure as observed on microscopical examination of thin sections. Most of them were of the nature of tumours, some were for evidence of tuberculosis or other change, and some were *post mortem* specimens. 38 specimens were examined during the year, 32 of which were for the Health Department.

BIOLOGICAL LABORATORY.

Certain infections require biological tests for the purpose of diagnosis. Some of the commoner ones were mentioned at the beginning of this Report. In 1932 these tests numbered 1,822, the number being again somewhat higher than usual owing to the investigation into tuberculous milk which ended in May.

VISITORS TO THE LABORATORY.

During the year several societies, &c., visited the laboratory by arrangement. These were the Trichological Institute of London (Glasgow Branch), Bridgeton Welfare Centre, Elderspark Welfare Centre, Glasgow and West of Scotland College of Domestic Science, and St. Mary's Church Men's Social and Literary Club. At these meetings the work and functions of the laboratory were discussed and demonstrations given.

The examinations performed in the bacteriological laboratory during 1932 numbered 41,558, as compared with 38,673 in the previous year. The sources of materials submitted were as follows :—

	Medical Practs.	Health Dept.	Other Local Auths.
Tuberculosis (Human)—			
Microscopical Examination—			
Sputum, ...	2,639	3,020	109
Urine,... ..	27	47	6
Cerebro-spinal fluid, ...	2	11	7
Pleural effusion, ...	9	12	3
Pus, ...	6	27	1
Fæces, ...	3	4	—
Swab, ...	1	1	—
Sputum from cow, ...	—	1	—
Debris from cervical gland, ...	1	—	—
Butter, ...	—	—	1
Biological Test, ...	56	111	18
Tuberculosis (Bovine)—			
Milk—			
Microscopical Examination, ...	—	48	17
Biological Test—			
Town Cows, ...	—	75	—
City Milk Supplies, ...	—	617	—
Samples from Hospital Milk Supply, ...	—	213	—
Miscellaneous Sources, ...	—	—	255
Typhoid and Paratyphoid Fever—			
Blood (agglutination), ...	151	115	37
Urine, fæces (cultures), ...	54	1,020	43
Water, ...	—	1	—
Dysentery—			
Fæces, ...	52	584	26
Blood 33, water 1, ...	1	33	—
Diphtheria—			
Throat swabs from suspected cases, ...	7,110	499	203
" " " contacts, ...	—	1,168	—
Virulence Tests, ...	39	92	40
Pre-admission Swabs, ...	117	532	—
Vincent's Angina—			
Throat swabs from suspected cases, ...	67	3	3
Cerebro-spinal Fever—			
Post-nasal swabs, ...	5	2	—
Cerebro-spinal fluid, ...	4	5	2
Meningitis—pneumococcal and influenzal—			
Cerebro-spinal fluid, ...	—	2	1
Pneumococcus and B. influenzae—			
Pleural exudate, ...	—	—	3
Swabs, ...	2	—	4
Lung 1, sputum 2, pus 2, ...	—	4	1

	Medical Practs.	Health Dept.	Other Local Auths.
Scarlet Fever, &c.—			
Cultural tests for hæmolytic streptococci, ...	29	127	24
Ophthalmia Neonatorum, ...			
... ..	9	1,045	4
Venereal Diseases—			
Wassermann Test, ...	5,149	5,474	1,090
Kahn—Ante-natal, &c., ...	7	5,989	—
Gonococcal Infections other than			
Ophthalmia Neonatorum, ...	593	521	20
Treponema pallidum, ...	11	1	—
Anthrax—			
Goatskin bindings of orange boxes, ...	—	20	—
Goatskin Hides, ...	—	2	—
Salted Cow Hides, ...	—	4	—
Plague—			
Examination of Rats from Ships, Docks, and City, ...	—	277	—
Infective Jaundice—			
Material from patients, ...	1	4	—
Malaria—			
Blood, ...	6	1	—
Bacterial Diagnosis (various diseases)—			
Urine 87, fæces 111, pus 19, cerebro- spinal fluid 18, swabs 6, miscel- laneous 60, ...	137	146	18
Food Poisoning Organisms—			
Examination of Food-stuffs, ...	2	22	2
Materials from patients, ...	3	57	—
Water—			
Bacterial Count, ...	17	3	4
Milk (Bacterial Content)—			
Under Milk (Special Designations)			
Order, ...	—	369	—
City Milk Supply, ...	—	327	—
Hospital Milk Supply, ...	—	207	—
Miscellaneous Sources, ...	25	—	50
Blood—			
Blood Counts, ...	—	3	—
Cytological examination by smears, ...	3	1	—
By Culture, ...	8	9	9
Pernicious Anæmia, ...	10	—	—
Leukæmia, ...	1	—	—
Cell Count, ...	1	—	—
Undulant Fever—			
Blood, ...	5	5	3
Histological Examination—			
Tumours and Tissues for Malignancy, &c., including P.M. specimens, ...	2	32	4

						Medical Practs.	Health Dept.	Other Local Auths.
Fungoid Diseases—								
Favus, ...	...	...	...	...	...	—	1	—
Parasites—								
Scabies, ...	...	...	...	...	...	1	1	—
Chemical Examination—								
Urine, ...	...	...	...	...	...	3	54	—
Preparation of Vaccine,...						...	2	—
Typhus—								
Serum Test (Weil-Felix),	...	...	...	...	...	—	3	—
Occult Blood—								
Fæces, ...	...	...	...	...	...	11	—	—
Identification of Insects,						...	2	—
Tetanus—								
Swab, ...	...	...	...	...	...	—	1	—
Streptococcus—								
Teeth, ...	...	...	...	...	...	—	1	—
B. cloacae—								
Fæces, ...	...	...	...	...	...	—	1	—
Koch-Weeks Bacillus—								
Smear, ...	...	...	...	...	...	—	1	—
						16,383	22,960	2,008
						41,351		
Water Department—								
Tap Water, ...	...	...	...	...	...	23		
Reservoirs, ...	...	...	...	...	...	48		
						—	71	
Baths Department—								
Water from Swimming Ponds,	...	...	...	...	...		136	
							41,558	

W. R. WISEMAN.

SECTION X.

FOOD.

FOOD POISONING, INFECTIONS, &c.

Numerous cases of alleged food poisoning are brought to the notice of the Department, although it is not always possible to establish the cause of the illness. This may be due to the difficulties of obtaining samples of the remains of the various foodstuffs consumed.

The following are notes on the cases investigated during 1932:—

January.—(a) A sudden acute attack of gastro-intestinal disturbance affected one person, two and a-quarter hours after eating some tinned rabbit. There were no other cases among those known to have eaten portions of the rabbit, and bacteriological and chemical examinations proved negative.

July.—(a) The local press reported that a case of suspected food poisoning had occurred in a family in the eastern district of the city. Two children of 12 and 15 years of age were taken ill at a picnic after having eaten meat pies. While the symptoms were indicative of poisoning, bacteriological examination yielded no evidence of injurious organisms; (b) five cases of illness, following a meal, were reported in the south-eastern district of the city, the symptoms being chiefly abdominal pain and diarrhœa. Two patients were admitted to hospital. The organism *bacillus enteritidis gærtner* was recovered from the stools of two of the patients. The article of diet suspected was stewed mutton, but no specimens were available for bacteriological examination. The interval between the consumption of the mutton and the onset of the symptoms was in all cases less than 48 hours; (c) four members of a family of seven sickened on the same day with similar symptoms—vomiting, diarrhœa, abdominal pains, headache, and pyrexia. One case was admitted to hospital. From specimens of fæces of the four patients and from the vomits of one patient a food poisoning bacillus of the *Samonella* group was isolated. Although specimens of all foodstuffs likely to cause sickening, consumed within twenty-four hours prior to sickening, were examined, no definite evidence as to the responsible article of diet was obtained.

August.—Fourteen persons suffered from symptoms of a mild gastro-intestinal disturbance. They had all, about the 8th August, eaten mussels which had been boiled before consumption. The mussels were collected on 7th August from the shores of Loch Long by a party of men who distributed the shell-fish to a number of families. Not all those who partook of the mussels suffered inconvenience. The prominent symptoms were vomiting, diarrhœa, and abdominal pain, and the interval between consumption of the molluscs and the appearance of the symptoms ranged from 8 to 24 hours. Two children developed an urticarial rash on the second day of illness. From eight of the nine mussels examined bacteriologically, coliform bacilli (*ærogenes* group) were isolated. Most authorities do not consider that this organism is indicative of excretal contamination. The City Analyst reported the absence of any metallic impurities likely to cause toxic symptoms. Arsenic was present in 4 parts per million, which is considerably below that usually recorded as occurring naturally in mussels. A lengthy and exhaustive examination for the presence of mytilotoxin was also made, with negative result. The cause of illness in this group is not clear.

Two other cases of intestinal disturbance followed the eating of boiled shell-fish. Specimens of the shell-fish and fæces were submitted for examination, with negative results.

September.—(a) Four outbreaks of diarrhœal illness occurred in the staff and patients of a large hospital in the city. Examinations for food poisoning organisms were negative. This, with the recurrence of the illnesses, indicated a bacillary infection, probably of *B. enteric* group. Immediate steps were taken to prevent further infection by possible carrier; (b) a number of patients in hospital were attacked with abdominal pain and diarrhœa of short duration, after an evening meal. Bacteriological and chemical examinations were negative.

October.—(a) A tin of tomatoes, suspected of causing illness in a family in the central district of the city, was submitted for examination. Bacteriological examination revealed no pathogenic organism, but on chemical analysis a high percentage of metallic tin was found; (b) a bottle of tomato ketchup was suspected as the cause of mild attacks of illness with gastro-intestinal symptoms. The remainder of the ketchup was submitted for examination, with negative results.

November.—(a) Complaint was made to the Department that illness had followed the consumption of apples. The symptoms in all cases were sickness accompanied by abdominal discomfort

(colic). A sample apple submitted for chemical examination revealed a higher percentage than usual of arsenic with a slight trace of lead. The combination of lead and arsenic is probably due to the use of lead-arsenic as an insecticide; (b) mild cases of illness, associated with beef supplied by a Glasgow firm, were reported in a country area. Specimens of fæces and the remainder of the beef were submitted for examination, but all gave negative results; (c) a case of illness, with symptoms indicative of food poisoning, was associated with the eating of a prepared welsh rarebit. Chemical and bacteriological examination of the remainder of the rarebit proved negative.

The following notes are submitted by the Senior Food Inspector:—

SUMMARY OF OPERATIONS UNDER THE FOOD AND DRUGS (ADULTERATION) ACT; THE MILK AND DAIRIES ACTS; THE MERCHANDISE MARKS ACTS; AND ALLIED ACTS AND ORDERS FOR THE YEAR ENDING 31ST DECEMBER, 1932.

The Food and Drugs (Adulteration) Act.—In terms of this Act, 5,107 samples were procured and examined, of which 3,822 were “informal” and 1,285 “statutory.” Of these, 127 and 67, respectively, were subsequently certified as non-genuine, and proceedings instituted in connection with 52 of the latter. In 49 of these, convictions were subsequently obtained, in one the diet was deserted *simpliciter*, and in two instances proceedings were departed from and expenses paid. The total fines and expenses imposed amounted to £158 11s. 3d. In regard to the provisions of the Act relating to the labelling, &c., of margarine, no contraventions were noted that warranted proceedings.

ABSTRACT OF TOTAL SAMPLES EXAMINED DURING 1932.

Article.	Informal.		Statutory.		Percentage adulterated.		Percentage of Samples taken in each Group to Total.	
	Taken.	Non-Gen.	Taken.	Non-Gen.	Inform.	Stat.	Inform.	Stat.
Milk and Cream, ...	2,259	57	808	10	2.52	1.24	59.1	62.9
Milk Products (Butter, Cheese, &c.), ...	332	4	73	2	1.20	2.74	8.7	5.7
Cereals, &c., ...	47	—	58	—	—	—	1.2	4.5
Spirituous Liquors, ...	306	40	18	8	13.07	44.44	8.0	1.4
Drugs, ...	257	11	40	3	4.28	7.50	6.7	3.1
Flavourings and Condiments, ...	115	—	67	—	—	—	3.0	5.2
Miscellaneous Foods, &c., ...	506	15	221	44	2.96	19.91	13.3	17.2
Totals, ...	3,822	127	1,285	67	3.32	5.21	100.0	100.0

ABSTRACT OF INFORMAL AND STATUTORY SAMPLES OF SWEET MILK EXAMINED DURING 1932.

Informal.				Month.	Statutory.			
No. exam- ined.	No. pre- sumed Non- Gen.	Average per- centage Composition.			No. exam- ined.	No. pre- sumed Non- Gen.	Average per- centage Composition.	
		Fat.	Non- Fat.				Fat.	Non- Fat.
		%	%				%	%
189	2	3·59	8·75	January,	69	1	3·60	8·68
174	4	3·54	8·76	February,	61	—	3·57	8·67
199	6	3·57	8·78	March,	70	1	3·67	8·74
196	4	3·64	8·74	April,	55	3	3·54	8·62
184	6	3·60	8·72	May,	72	—	3·60	8·62
225	3	3·54	8·76	June,	70	2	3·53	8·77
143	4	3·54	8·72	July,	67	—	3·55	8·64
176	8	3·63	8·70	August,	69	—	3·60	8·66
180	4	3·77	8·72	September,	66	1	3·66	8·59
189	9	3·87	8·75	October,	65	1	3·85	8·75
150	5	3·64	8·72	November,	67	—	3·67	8·66
182	2	3·62	8·71	December,	60	1	3·58	8·67

The latter table indicates the satisfactory quality of the milk supply of the city as it reaches the consumer. Thus, for a number of years the average fat content in any single month has rarely been lower than 3.5 per cent., and not infrequently has approximated to 4 per cent. For this there are various contributing factors, such as (1) the improved quality of milk as produced, due to periodic testing by producer and consignee, and bonus incentives; (2) the bulking of supplies by large distributors prior to treatment; and (3) its bottling before distribution, whereby depreciation by careless dipping, as in the case of loose milk, is obviated.

Drugs.—The new British Pharmacopœia has now been issued, becoming official as from 1st October, 1932. There have been numerous changes of nomenclature and also a simplification and increase of synonyms which will, to some extent, facilitate the obtaining of samples for test purposes. Its value as an official code on which to judge contraventions of the Food and Drugs Act is increased by several additions to it. For instance, standards of strength of Easton's syrup, Parrish's syrup or chemical food, extract of malt, and also extract of malt with cod-liver oil are now included. In order to permit of druggists disposing of present stocks and to enable them to come into line

with the requirements of the new British Pharmacopœia, sampling of drugs was suspended from 1st October till 31st December, 1932.

Last year samples of the commonly-prescribed tonics, Easton's syrup and Parrish's syrup, were found deficient in their essential ingredients and important prosecutions followed. This year several samples of liniment of turpentine, commonly prescribed by medical men, were reported on as having substantial deficiencies in their active principles, i.e., camphor and turpentine. It appears that there are analytical difficulties in discriminating between the proportions of these constituents present, and as proceedings were unlikely to succeed no action was taken.

Artificial Cream Act, 1929.—Artificial or reconstituted cream—while extensively used as an ingredient of, or in combination with, various articles of food—does not appear on sale as such. A commodity was found to be on offer to bakers—which, while resembling cream, was other than “cream” or “artificial cream” as defined—the descriptive name of which included the word “cream,” contrary to Section 1 (1) of the Act. The matter was immediately remedied on the manufacturer's attention being directed thereto.

Preserves.—The standard of the Manufacturers' Federation was used in examination of samples of preserves, and in two samples, one each of black currant and strawberry jams, the percentages of soluble solids were found below the minimum limit, i.e., 68·5, and the manufacturers advised; otherwise, all samples were found satisfactory.

Preservatives, &c., in Food.—There has been no change in the Regulations governing the use of preservatives, although protests by various interests continue. The corresponding Regulations issued by the Government of Northern Ireland in 1927 are again postponed till 1st July, 1933. These have never functioned, but have been postponed from time to time. As considerable quantities of cream are at times received from Northern Ireland, samples were taken at irregular intervals, especially during the summer months, and no preservatives were found in any cream sample during the year. The presence of sulphites in mince, &c., continues to be practically the only form of offence in relation to these Regulations. In 1931, there was a marked diminution in the number of cases (20), but last year the necessity for legal proceedings has increased to 31, 22 of which were in respect of the proscribed period.

Appended is table of samples in which preservatives were found, together with the nature and amounts.

ABSTRACT OF ARTICLES OF FOOD IN WHICH PRESERVATIVES, &c.,
WERE FOUND, AND THE NATURE AND AMOUNT DURING YEAR
ENDING 31ST DECEMBER, 1932.

Nature of Article.	Number examined.	Number in which Preservatives, &c., were found.	Nature of Preservative, &c.	Parts per Million.	
				Lowest.	Highest.
Apricots (Dried), ...	10	7	Sulphur dioxide,	595	1,472
Cherries (Preserved),	5	1	" "	Trace	
Cider, ...	9	7	" "	25	70
Fruit Salad (Dried),...	3	2	" "	179	365
Fruit Squash, ...	2	1	Benzoic acid, ...		431
		1	Sulphur dioxide,		185
Mince, ...	136	77	" "	20	1,670
Preserves, ...	27	11	" "	10	70
Sausages, ...	41	40	" "	10	790
Sausage Meat, ...	9	7	" "	9	1,020
Sugars (Various), ...	7	1	" "		4.8
Sultanas, ...	35	20	" "	9	332
Wine Jelly, ...	1	1	" "		6
Wines (Alcoholic), ...	15	1	" "		64
(Non-Alcoholic), 13		11	{ 2 " "	64	115
			{ 9 Benzoic acid, ...	220	560

Tomatoes and the Use of Fungicidal Sprays.—Fresh tomatoes came under suspicion as to their possible contamination with deleterious substances, owing to the fact that in the course of their growth they are not infrequently treated with a fungicidal spray, of which sulphate of copper is an ingredient. Nine samples of tomatoes—three each of Scotch, Dutch, and Channel Islands produce—were submitted for examination. The tomatoes composing each sample were washed and the copper determined in the liquid thus obtained, with the following results:—

Sample No.	Crystallized Copper Sulphate (Grains per lb. of Tomatoes).	Equivalent to Metallic Copper (Grains per lb. of Tomatoes).
2755	0.015	0.0040
2756	0.002	0.0005
2757	0.102	0.0260
2758	Trace.	Trace.
2759	0.004	0.0012
2760	0.006	0.0015
2761	0.003	0.0008
2762	0.0015	0.0004
2763	0.040	0.0100

For purposes of comparison a sample of home-grown tomatoes, to which it was definitely ascertained no copper spray had been applied, was obtained and examined simultaneously, with the following result:—Crystallized copper sulphate 0·007 grains per lb. of tomatoes, equivalent to 0·0020 grains metallic copper per lb. of tomatoes. In submitting the results of analyses, the Analyst states: “The minute quantity of copper found, together with the results obtained in the case of the home-grown, untreated tomatoes, indicate that, with the possible exception of samples No. 2757 and 2763, the minute quantity of copper found is natural to tomatoes.”

Milk (Special Designations) Order (Scotland), 1930.—The details of licences in force at the end of 1932 and the approximate daily gallonage distributed, with comparative figures for the two previous years, are as under:—

Certified—						1932.	1931.	1930.
Producers,	...	...	...	...	—	—	—	1
Dealers,	...	...	...	...	...	64	56	50
Total average daily sales (gallons),	...	...	...	...	...	166	158	126

Grade “A” (Tuberculin Tested)—

Producers,	...	...	...	...	—	—	—	—
Bottling establishments,	...	...	...	...	3	3	3	4
Dealers,	...	...	...	...	...	314	313	280
Total average daily sales (gallons),	...	...	...	...	...	1,102	1,067	936

Grade “A” —

Producers,	...	...	...	...	—	—	—	—
Bottling establishments,	...	...	...	...	1	1	1	1
Dealers,	...	...	...	...	...	58	57	51
Total average daily sales (gallons),	...	...	...	...	...	*298	†386	‡408

Pasteurised—

Pasteurising establishments,	...	...	...	...	3	2	2	2
Dealers,	...	...	...	...	...	22	23	17
Total average daily sales (gallons),	...	...	...	...	...	1,212	1,177	1,100

* 280 gallons pasteurised. † 375 gallons pasteurised. ‡ 400 gallons pasteurised.

Note.—The gallonage is exclusive of supplies to institutions and of pasteurised milk not described or sold as such.

During the year a total of 369 samples of designated milks as sold within the city were procured and examined as to their conformity with the above Order. A tabular statement of the results is appended.

RESULTS OF EXAMINATIONS OF DESIGNATED MILKS.

Designation and Requirements.	Number examined.	Number conform to count and coliform requirements.	Number exceeding count only.	Number exceeding count and having coliforms present.	Number conform to count but with coliforms present.	Agar count per c.c.			Presence of Coliforms.		Fat Minimum (3.5%).		
						Lowest.	Highest.	Average of Total samples.	-	+	Number at or above.	Number below.	Average Fat Content.
CERTIFIED— Bacteria not to exceed 30,000; Coliform absent in $\frac{1}{10}$ c.c.; Fat not less than 3.5%, ...	100	83	6	5	6	100	3,591,000	75,632	89	11	94	6	3.89
GRADE "A" (Tuberculin tested) Bacteria not to exceed 200,000; Coliform absent in $\frac{1}{100}$ c.c.; Fat not less than 3.5%, ...	191	160	1	9	21	500	3,780,000	73,540	161	30	172	19	3.87
GRADE "A"— Requirements are as for Grade "A" (Tuberculin Tested),	12	11	—	1	—	4,350	284,400	48,408	11	1	10	2	3.73
GRADE "A" (Pasteurised)— Requirements are as for "Certified," ...	26	26	—	—	—	200	5,750	1,396	26	—	24	2	3.72
PASTEURISED— Bacteria not to exceed 100,000,	40	28	—	*1	*11	100	355,150	20,243	28	12	†40	—	3.67

* No coliform test prescribed.

† Fat minimum, 3.0%.

The foregoing table shows that 82 per cent. fully conform as regards bacterial count and coliform requirements, compared with 90 per cent. in 1931, and, in relation to fat contents, 92 per cent. as against 94.2 per cent. in the previous year.

While excessively high counts were not infrequent in respect of supplies hitherto disclosing figures well below normal, an even more marked feature was the persistent presence of coliforms in association with milks of low bacterial count, despite every effort to trace the origin and eliminate the cause. The commonly accepted view that there is a general correspondence between high counts and organisms of the coli type does not appear entirely correct. Conversely, there were also instances of exceptionally high counts with coliforms absent, and in both instances the samples were collected and examined a few hours after production. Thus, difficulties arise in the interpretation of the presence of these organisms which require further elucidation. A further important feature is the disparity in results of examinations of identical milks by different workers using the same technique, a matter which is under special reference and has previously been investigated by the London School of Hygiene at the instance of the Empire Marketing Board with a view to the recommendation of reliable and standardised methods of testing.

There were two prosecutions in relation to the unlicensed advertising and sale of designated milks, and penalties in all of £2 10s. were imposed.

Designated Milk Supplies to Corporation Hospitals.—All hospitals, &c., under the control of the Public Health Department continue to be supplied with Grade "A" (Tuberculin Tested) milk, the total average daily quantity being approximately 1,572 gallons. Samples of milk as received by these institutions were obtained at irregular intervals and submitted to bacteriological and chemical examination. Of 206 samples, the bacterial count exceeded the standard in 11 instances. The average fat content was well above the standard. No tubercle bacilli were found in 170 specimens.

Tubercle in Milk (Special Investigation).—This investigation into the incidence of tubercle bacilli in various milks was commenced in April, 1931. It was conducted simultaneously in the four principal cities in Scotland, and was concluded at the end of March, 1932. An interim report of available data, as at 31st December, 1931, was compiled from the samples obtained in Glasgow, and was contained in the Annual Report of last year. The following tabular statements and detailed analyses set out the results of these investigations over the whole period as affecting Glasgow samples. The results obtaining in all four

cities are being collated by the Department of Health for Scotland, and their publication is expected at an early date:—

**TUBERCLE BACILLI IN MILK—RESULTS OF SPECIAL INVESTIGATION,
JUNE, 1931, TO MARCH, 1932.**

Group.	Number of Samples submitted.	Total number reported Tuberculous.	Number of these Tuberculous in both guinea pigs.	Number reported Tuberculous in First guinea pig only.	Number reported Tuberculous in Second guinea pig only.
A. Raw, ...	329	48	35	2	11
B. Pasteurised, ...	348	6	1	—	5
C. Retailed, ...	200	18	7	4	7
Totals, ...	877	72	43	6	23

This table shows that, of 329 samples of raw milk taken while the milk was in transit and before pasteurisation and distribution, 48, or 14·6 per cent., gave positive results for tubercle bacilli. Of milk as retailed, 18, or 9 per cent., were positive out of 200 samples, while of 348 samples of pasteurised milk 6 were positive. Of these 6 pasteurised samples, 4 were in respect of milk heated by the "flash" method of pasteurisation, and two were in respect of milk pasteurised by the holder process. In one case the milk was retained at 145°F. for only twenty minutes, and in the other case the result was positive in the second guinea pig inoculated.

**TUBERCLE BACILLI IN MILK—RESULTS OF SPECIAL INVESTIGATION,
JUNE, 1931, TO MARCH, 1932.**

Analysis of Group "C"—Retailed Milk.

Reputed Method of Treatment (if any).	Total Samples.	Number Tuberculous.
Raw (untreated), ...	40	9*
Treatment (if any) unknown, ...	43	7†
Open Cans immersed in Boiler at 130°F., ...	1	—
Flash pasteurised at ... 145°F. 148°F. 150°F. 153°F. 160°F. 164°F. 165°F.		
Number of Samples, 1 2 9 1 18 3 10 44		1‡ at 148°F.

Temperature and Time held thereat.

143°F.	145°F.	145°F.	146°F.	147°F.	148°F.	148°F.	150°F.	153°F.
30	20	30	30	13	20	30	30	30
mins.	mins.	mins.	mins.	mins.	mins.	mins.	mins.	mins.

Retarders
and Positive
Holders,

1 14 45 3 1 2 2 3 1 72	1§ at 145°F. for 30 mins.
------------------------	------------------------------

* 2 samples positive in 1st test only.

4 " " 2nd

3 " " both tests.

† 1 sample positive in 1st test only.

2 samples " 2nd

4 " " both tests.

‡ Positive in 1st test only.

§ Positive in 2nd test only.

Tubercle, &c., in Ordinary Market Milk.—The routine sampling of raw milk as received by city dairymen from farmers suspended during the period of the special investigation was recommenced in April, 1932. At 31st December, 1932, a total of 231 composite samples from individual supplies had been obtained and submitted to the City Bacteriologist, 20 of which were subsequently reported as containing tubercle bacilli, equivalent to 8.66 per cent.

Bacterial Counts of Market Milk.—To determine the cleanliness of milk as produced, 277 composite samples of consignments as received from farmers were procured on arrival at consignees' premises and submitted for examination. The following table shows the results:—

Number examined.	Average number of bacteria per c.c.					Coliforms in 1/100 c.c. (2 days).	
	Under 100,000	100,000 to 200,000	200,000 to 500,000	500,000 to 1,000,000	Over 1,000,000	—	+
277	150	45	30	16	36	135	142

As is shown by the above table, 70.4 per cent. were equivalent in bacterial count to milk of Grade "A" quality, compared with 79.6 in 1931. Of the 150 samples in which less than 100,000 bacteria per c.c. were present (equal to 54.0 per cent., compared with 65.5 per cent. in the previous year), 73 of these, or 48.7 per cent., were equivalent to "Certified" quality, as against 54 per cent. in 1931. Coliform bacilli in 1/100th c.c. were absent in 48.7 per cent. of the total samples examined, whereas in 1931, 67.5 per cent. were satisfactory in this respect. If one has regard to the usual criterion, namely, that a high bacterial count generally indicates a lack of cleanliness in the production or of the utensils, and the marked presence of coliforms as indicative of manurial contamination, these figures suggest that conditions are less satisfactory in 1932 as compared with the previous year. The officials in producing areas have continued to co-operate wholeheartedly in investigating tuberculous infections and unsatisfactory samples which are from time to time reported to them.

Condensed and Dried Milks.—A total of 43 samples of condensed milks of different brands were informally obtained and analysed. Twenty-four of these were of machine-skimmed (sweetened), ten of full-cream (sweetened), and nine of evaporated (unsweetened). All were subsequently reported as complying with requirements as to composition and equivalents.

Merchandise Marks Acts and Orders, &c.—The only new Order issued during the year was in relation to butter (S.R. and O., 1932, No. 128). It applies to all imported butter, or blends

consisting of or containing imported butter, and requires that bulk butter exposed for sale must bear a ticket with the indication of origin in half-inch letters clearly visible to purchasers. In the case of pre-packed retail sales, the indication of origin must be indelibly marked in a conspicuous manner on the outside of the package or on the label attached, or be visible through the wrapper in letters one-twelfth of an inch in height. Various options are given in the case of blends. In "butter factories" where "straight" butters from various countries were formerly used, the admixing of small quantities of home butter is practised, labelling it then as "including imported butter," as is provided in the Order. This provision lends itself to abuse, and several traders were warned in this regard.

During the year there was a total of 24 prosecutions in relation to Marking Orders—18 in respect of tomatoes and 6 of apples. A conviction in each was obtained, and fines totalling £23 were imposed. These were mainly attributable to carelessness despite warnings, and not to wilful misrepresentation.

With reference to the Grading and Marking (Eggs) Regulations, 1929, experience shows that eggs, subsequent to despatch to middlemen and consumers by authorised graders and packers, lose their identity, as it is not possible to discriminate between those of different condition or weight or from other eggs of British origin. It is also found that traders may possess and display cards (A.M.11, issued by the Department of Agriculture) bearing the National Mark, yet neither be in possession of, or at any time dealers in, National Mark eggs. The only remedial measure for this would appear to be that every egg, prior to despatch by authorised packers and graders, should be indelibly marked for identification.

Occasion arose in mid August to examine deliveries of Irish Free State eggs which purported to be fresh and non-cold stored. Inspection and "candling" of the eggs showed relatively large air-cells and the "whites" weak and watery, while the "yolks" moved freely; in some instances there was adherence. As the stamp was in purple ink, it was indicative of grading and packing being prior to 31st July; on the inner surface of the cases the actual date was found to have been obliterated and an August date substituted. While the eggs could not be deemed unmarketable, they were obviously not fresh and had been cold stored. The duties on Irish Free State imports were imposed on 13th July, and the eggs had no doubt been imported prior thereto and retained in cold store. The facts were communicated to the egg marketing officer representing Irish Free State interests in this country.

Under the Agricultural Produce (Grading and Marking) Act, 1928, four cold storage premises for eggs are registered. British

eggs, i.e., eggs produced in the United Kingdom,* are required in terms of the 1929 Regulations, and, before removal from such premises, to be legibly marked "chilled" or "cold stored." In two instances eggs were removed without complying with the above provisions. The delinquents pleaded ignorance and were warned, written assurances being received of steps taken to obviate any recurrence. The position is not satisfactory, as eggs can be removed at any time from cold storage and proper oversight is impracticable. It is suggested that the Department of Agriculture should enact, as is done in the corresponding Regulations for Northern Ireland, that marking should be effected before or at the time of deposit in cold store premises, and records kept by occupiers of quantities and ownerships, dates of deposit and removal, and the name and address of consignees. Under present conditions, due supervision and enforcement are mainly dependent on the co-operation and goodwill of the store-keepers. These difficulties have been reported to the Department of Agriculture, and a reply received that the matter will be considered in future amending legislation.

Registration of Butter Factories, &c.—In terms of Section 8 of the Food and Drugs Act, four applications for registration of premises for use as "butter factories" were received, and approved after inspection. There were no applications in relation to margarine. As customary, irregular inspection and sampling in butter factories were made throughout the year, all of these being found satisfactory. The nature of the premises embraced by Section 8 and the number on the register at end of 1932 were as follows:—Manufactories of margarine, 1; wholesale dealers in margarine, 254; manufactories of milk-blended butter, —; butter factories, 22.

Fertilisers and Feeding Stuffs Act, 1926.—Revised Regulations under the above Act to replace those of 1928 were issued by the Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland jointly, and came into operation on 1st September, 1932 (S.R. and O., 1932, No. 658). The new Regulations deal with, amongst other matters, methods of sampling and analysis, permissible limits of variations, and alterations of the schedules to the 1926 Act. While no formal application to sample was received during 1932, a total of 38 samples of feeding-stuffs, compounds and concentrates in general use were informally obtained and examined by the Agricultural Analyst. All were subsequently reported as conforming to the requirements of the statute and of the schedule thereto. Failure to furnish the statutory statement was noted in two instances and the sellers warned.

* "United Kingdom" shall, unless the context otherwise requires, mean Great Britain and Northern Ireland (*vide* Royal and Parliamentary Titles Act, 1927, Section 2).

Food Inspections, &c.—A total of 13,447 inspections in relation to foodstuffs was made in markets, shops, and stores, and over 59 tons of various foodstuffs were condemned on various grounds as unfit for human consumption. One lot destroyed, consisting of mustard, disclosed a somewhat unusual feature. The colour was found to be partially discharged, due to a heavy infestation of a minute insect (*Tyroglyphus farinae*) which had reduced the commodity to an almost impalpable dust. In addition to destruction, thorough disinfection of the receptacles and those contiguous was effected. Measures for the protection of foodstuffs in relation to their storage or exposure for sale in so far as these are enforceable continue to be exercised, and in 27 instances faulty conditions of cleanliness were remedied. Proceedings in one instance were taken.

Saturday markets have grown up of late in the east end of the city, where a heterogeneous assortment of articles is sold retail, or by Dutch auction, on stalls, stances, and barrows. A tendency to introduce articles of food has been of late evidenced, and only by frequent inspection, representation, and pressure has this been curtailed or eliminated, as foodstuffs under these conditions are liable to contamination. Laws for the protection of foodstuffs are still inadequate and the proposed Regulations of the Department of Health are awaited.

Milk and Dairies (Scotland) Order, 1925.—The unauthorised use of milk bottles contrary to Article 12 continued to bulk largely. Invariably pleas were tendered in these cases, but in one instance there ensued important litigation. Legal objections to the competency of the Article, reported by the Stipendiary Magistrate, were made the subject of appeal to the High Court and dismissed. A civil action was then brought by the dairyman against the Department of Health, and judgment given for the pursuer on the ground that Article 12 was too wide, vague, and unreasonable. This decision is of great importance and has given much concern to the users of bottled milk. In consequence of this decision, 23 prosecutions of offenders for using bottles other than their own were abandoned. The bottle exchange set up at the commencement of the Order is now imperilled. Other action is now contemplated under the Merchandise Marks Act, 1887, in respect of the sale of milk under a "false description," or for the unauthorised use of a registered trade mark. The consumer obtaining supplies from different dairymen is the main cause of the difficulty, and the exaction of a deposit in respect of every bottle with a refund on return of bottle and token would, if universally adopted, be of some assistance. The abolition of the disc-closed bottle and the adoption of bottles closed by methods akin to crown-corking by means of tear-off aluminium caps would also militate against the unauthorised and illegitimate use of bottles.

Other offences dealt with under the Order were—two of storing milk for sale in dwelling-house (one of which is referred to in Report on Ice-cream Shops), and one each of transferring from one vessel to another elsewhere than in dairy, and using milk vehicle to convey articles likely to contaminate the milk. In each instance a conviction was obtained, and £8 10s. in fines imposed.

Dairies.—In terms of the Milk and Dairies (Scotland) Act, 1914, the total registrations at end of year were 1,759, as against 1,733 in 1931, an increase of 26. Of these, 468 were in respect of limited registration, i.e., restricted to the reception and sale of bottled milk only, compared with 385 in the previous year, an increase of 83. The distribution of milk in bottles continues to grow, and now approximates to between 70 and 75 per cent. of the total supply. There is, however, an increasing tendency for producers to sell “loose” milk, particularly in housing areas on the periphery of the city. Milk distribution by the producer-retailer is less amenable to control than are the ordinary supplies. Indeed, this kind of supply is, not infrequently, one which has been discontinued by the larger distributor owing to its unsatisfactory nature. Inspections of dairy premises numbered 21,960, and 17 contraventions of the Act or its bye-laws were noted, in only eight of which were proceedings necessary, as follows:—Failure to register, 4; bottling milk elsewhere than in dairy premises, 2; returning uncleansed milk vessels per common carrier and failing to keep milk vehicle thoroughly clean, one each. With two exceptions, convictions were obtained, and £6 10s. in fines imposed. Fifteen notices requisitioning alterations, repairs, or improvements were issued and received due attention.

Byres.—The number of byres within the area of the city is the same as in the previous year, viz., 53, with accommodation for 1,212 milch cows, the average number kept being 980. All have grazing facilities, with one exception, where twelve cows are stall-fed. Inspections as to maintenance of premises and conditions of production totalled 460, in the course of which several minor breaches of the bye-laws were noted, all of which received due attention.

Ice-cream Shops.—In terms of the Glasgow Corporation Order, 1919, the number of premises for the manufacture or sale of ice-cream at end of year totalled 587, an increase of four. 8,185 inspections were made therein, and six intimations of breaches of bye-laws or repairs desiderated issued. One vendor was proceeded against for storing milk intended for use in the manufacture of ice-cream in dwelling-house and was fined £2.

ALEX. B. FINDLAY,

27th April, 1933.

Senior Food Inspector.

THE FOOD AND DRUGS (ADULTERATION) ACT, 1928.

TABLE SHOWING NATURE AND NUMBER OF TOTAL SAMPLES
PROCURED AND EXAMINED DURING 1932.

Nature of Sample.	Informal.		Statutory.		Nature of Sample.	Informal.		Statutory.	
	Number taken.	Number non-genuine.	Number taken.	Number non-genuine.		Number taken.	Number non-genuine.	Number taken.	Number non-genuine.
Almonds, ground,	6	—	—	—	Extract of Malt,...	2	—	—	—
Apricots, canned, }	8	—	3	—	Figs, dried, }	3	—	1	—
„ dried, }	8	—	6	—	„ canned, }	2	—	—	—
Arrowroot, ...	8	—	—	—	Fish, canned, ...	8	—	—	—
Bacon, ...	5	—	6	—	„ Paste, ...	16	—	19	—
Barley, ...	12	—	13	—	Flour, Self-raising,	4	—	5	—
Beans, canned, ...	1	—	—	—	Flowers of Sulphur,	4	—	—	—
Bicarbonate of Soda,	2	—	—	—	Fruit Salad, }	4	—	1	—
Blood Pudding, ...	2	—	—	—	„ canned, }	—	—	2	—
Boric Acid, ...	7	—	4	1	„ dried, }	—	—	—	—
Borax, purified, ...	10	—	2	—	„ Squashes, ...	15	3	—	—
Brandy, ...	2	—	—	—	Gin, ...	22	—	11	—
Butter, ...	273	3	52	—	„ preserved, ...	—	—	1	—
Buttermilk, ...	1	—	—	—	Glycerine, ...	5	—	—	—
Candied Peel, ...	6	—	3	—	Golden Syrup, ...	1	—	—	—
Cheese, ...	51	1	21	—	Grape Fruit, canned,	2	—	—	—
Cherries, canned }	5	—	1	—	Gregory's Powder,	5	—	—	—
„ preserved, }	5	—	—	—	Honey, ...	6	—	—	—
Chicken and Ham	—	—	—	—	Lard, ...	25	—	14	—
Roll, ...	—	—	1	—	Lemon Cheese or	—	—	—	—
Cider, ...	9	—	—	—	Curd, ...	2	—	—	—
Cinnamon, ground,	25	—	17	—	Lemon Gin, ...	1	—	—	—
Cocoa, ...	18	—	2	—	Linseed Meal, ...	8	—	4	—
„ with malted	—	—	—	—	Liniment of Turpen-	8	5	—	—
milk and eggs,	1	—	—	—	tine, ...	8	—	—	—
Coffee, ...	26	1	10	—	Liquorice Powder	—	—	—	—
Coffee Essence with	—	—	—	—	Compound, ...	3	—	—	—
Chicory, ...	3	—	—	—	Magnesia, ...	2	—	—	—
Cornflour, ...	2	—	4	—	Margarine, ...	7	—	14	1
Cream, ...	20	—	10	—	Meat, canned, ...	4	—	—	—
Cream, canned, ...	1	—	—	—	Meats, various, ...	8	—	—	—
Cream of Tartar,...	28	—	6	—	Meat, potted, ...	19	—	—	—
Currants, ...	15	—	10	—	Meat, paste, ...	11	—	—	—
Custard Powder,	2	—	1	—					
Dripping,...	32	—	12	—					
Essence of Rennet,	6	—	—	—					

Nature of Sample.	Informal.		Statutory.		Nature of Sample.	Informal.		Statutory.	
	Number taken.	Number non-genuine.	Number taken.	Number non-genuine.		Number taken.	Number non-genuine.	Number taken.	Number non-genuine.
Milk, Skimmed, ...	8	—	10	—	Pepper compound, ...	1	—	—	—
„ Sweet, ...	2,187	57	788	10	Pickles, ...	2	—	—	—
„ condensed, skimmed, sweetened, ...	24	—	—	—	Pineapple, canned, ...	1	—	—	—
„ condensed, full-cream, sweetened, ...	10	—	—	—	Plums, canned, ...	1	—	—	—
„ condensed, full-cream, evaporated, unsweetened, ...	9	—	—	—	Preserves, ...	26	—	1	—
„ dried, full-cream, ...	4	—	—	—	Prunes, ...	31	—	17	—
„ dried, full-cream, and Virol, ...	1	—	—	—	Raisins, ...	3	—	2	—
„ dried, machine-skimmed, sweetened, ...	1	—	—	—	Raspberries, canned, ...	3	—	—	—
„ dried, full-cream, modified, ...	1	—	—	—	Rice, ground and whole, ...	6	—	7	—
Milk of Sulphur, ...	3	—	1	—	Rum, ...	39	1	—	—
Mince, ...	65	14	71	36	Salmon Roll, ...	1	—	—	—
Mincemeat, ...	5	—	—	—	Salts, medicinal, ...	6	—	1	—
Mustard, ...	11	—	5	—	Sauces, various ...	3	—	—	—
Oatmeal, ...	1	—	4	—	Sausages, ...	17	—	24	6
Oil, Almond, ...	26	4	2	2	Sausage Meat, ...	2	—	7	1
„ Camphorated, ...	33	1	7	—	Semolina, ...	—	—	1	—
„ Cod Liver, ...	4	—	—	—	Soup, canned, ...	1	—	—	—
„ Castor, ...	4	—	—	—	Sponge Cakes, ...	1	—	—	—
„ Eucalyptus, ...	21	—	1	—	Steak and Ham Roll, ...	—	—	1	—
„ Olive, ...	33	—	3	—	Suet, shredded, ...	4	—	4	—
„ of Wintergreen, ...	3	—	—	—	Sugars, various, ...	6	—	1	—
Ointments, various, ...	11	—	—	—	Sultanas, ...	23	—	12	—
Orange cream, ...	1	—	—	—	Strawberries, canned, ...	2	—	—	—
Orange Gin, ...	2	—	1	—	Tapioca, ...	2	—	4	—
Peas, canned, ...	9	—	—	—	Tartaric Acid, ...	15	1	3	—
Peaches, canned, ...	4	—	—	—	Tea, ...	17	—	—	—
Pears, canned, ...	2	—	—	—	Tincture of Iodine, ...	14	—	1	—
Paregoric, ...	2	—	—	—	Toffee, ...	1	—	—	—
Pepper, ...	6	—	—	—	Tomatoes, fresh, ...	9	—	—	—
„ black, ...	4	—	5	—	„ canned, ...	5	—	—	—
„ white, ...	42	—	22	—	Tripe, ...	7	—	—	—
					Vinegar, ...	4	—	6	—
					Whisky, ...	223	36	17	8
					Wine Jelly, ...	1	—	—	—
					Wines, alcoholic, ...	15	—	—	—
					„ non-alcoholic, ...	13	—	—	—
					Totals, ...	3,822	127	1,285	67

THE FOOD AND DRUGS (ADULTERATION) ACT, 1928.

Details of Samples in which Proceedings were instituted during 1932.

Number of complaints.	Nature of sample and alleged offence.	Number of convictions.	Amount of fines imposed.			Number dismissed or found "not proven."	Number deserted simpliciter.	Number with-drawn and expenses paid.	Amount of expenses paid.		
			£	s.	d.				£	s.	d.
2	<i>Almond Oil</i> —Consisted of oil derived from the kernels of peach or apricot stones, ...	2	6	0	0	—	—	—			
1	<i>Boric Acid</i> —Contained sodium baborate, ...	—	—	—	—	—	—	1	1	1	0
2	<i>Butter</i> —Contained fat other than milk-fat, ...	2	12	0	0	—	—	—			
1	<i>Margarine</i> —Contained excess water, ...	—	—	—	—	—	—	1	1	1	0
7	<i>Milk (Sweet)</i> —Deficient in milk-fat,... ..	6	29	0	0	—	1	—			
1	<i>Milk (Sweet)</i> —Deficient in milk solids other than fat, ...	1	2	10	0	—	—	—			
22	<i>Mince</i> —Contained sulphite preservatives during proscribed period, ...	22	58	9	0	—	—	—			
4	<i>Mince</i> —Contained excess of sulphite preservatives during permitted period, ...	4	11	10	0	—	—	—			
4	<i>Sausages</i> —Contained excess of sulphite preservatives, ...	4	10	10	0	—	—	—			
1	<i>Sausage Meat</i> —Contained excess of sulphite preservatives, ...	1	3	0	0	—	—	—			
7	<i>Whisky</i> —Contained excess water, ...	7	23	0	0	—	—	—			
52		49	155	19	0	—	1	2	2	2	0

ABSTRACT OF PROCEEDINGS UNDER OTHER THAN THE FOOD AND DRUGS ACT.

Nature of alleged offence.		Number of complaints.	Number of convictions.	Amount of fines imposed.			Number dismissed or found "not proven."
Merchandise Marks Acts and Orders—				£	s.	d.	
Imported raw tomatoes—failing to label with indication of origin, ...		18	18	17	5	0	—
Imported fresh apples—failing to label with indication of origin, ...		6	6	5	15	0	—
Milk and Dairies (Scotland) Act, 1914—							
Failing to register as a dairyman, ...		4	3	3	0	0	1
Milk and Dairies (Amendment) Act, 1922—							
Selling designated milk without being licensed, ...		1	1	1	10	0	—
Advertising designated milk for sale without being licensed, ...		1	1	1	0	0	—
Milk and Dairies (Scotland) Order, 1925—							
Using milk bottles other than own, ...		35	12	29	0	0	23*
Storing milk for sale in dwelling-house, ...		2	2	4	0	0	—
Transferring milk from one vessel to another in other than registered premises, ...		1	1	2	0	0	—
Using milk vehicle for conveyance of articles likely to contaminate the milk, ...		1	1	2	10	0	—
Dairy Bye-laws—							
Bottling milk elsewhere than in milk store or bottling room, ...		2	2	2	10	0	—
Failing to cleanse milk vessels before returning same by common carrier, ...		1	—	—	—	—	1
Failing to keep clean vehicle used for the sale of milk, ...		1	1	1	0	0	—
Totals, ...		73	48	69	10	0	25

* Deserted simpliciter in view of decision in Civil Declarator action against Department of Health for Scotland.

SECTION XI.

AIR PURIFICATION.

In the Report for last year reference was made to the domestic fire as one of the main causes of atmospheric pollution and to the diminishing contribution of the industrial chimney in this respect. The following table shows that the total deposit in tons per square mile has decreased from 278 in 1929 to 234 in 1932, while the rainfall has remained at a steady figure:—

					Total Deposit (Tons per square mile).	Hours of Fog.	Rainfall (in Inches).
1929,	...	...	...	...	278	308	43
1930,	...	...	...	...	274	429	43
1931,	...	...	...	...	262	162	43
1932,	...	...	...	...	234	200	43

As the amount of deposit is, other things remaining constant, related to the rainfall, it may be inferred that this record indicates a very definite improvement; some part of this may, however, be due to trade depression. On the other hand, there has probably been a reduction in concentrated pollution caused by domestic fires following upon the clearance of congested areas in the city with their long three and four-storey chimneys, associated in many cases with antiquated open grates.

As regards hours of fog, a coincident reduction during the past two years has been recorded at the centre of the city (Glasgow Cross). Last year there was published in the Annual Report a chart showing the relationship of the deposit of total solids in the north, east, south, and west of the city to that of the central area. In a general way the deposit was highest at the points which, as indicated by the monthly return, were remote from the direction of the prevailing wind. Variations in amount of deposit in different areas depend on meteorological conditions such as wind, temperature, humidity, time and type

of rainfall, &c., a group of factors which must be taken into account in studying local conditions.

The following report is submitted by the Senior Smoke Inspector:—

SMOKE ABATEMENT.

During the year 1932 systematic observation shows that definite and satisfactory progress continues to be made in ways which in the aggregate lead to an appreciably cleaner atmosphere, although it is difficult to express this in terms of recorded results, as these are apt to be influenced by a variety of factors not subject to control. Industrial depression is one of these factors, but it may be remarked that smoke is not necessarily an adjunct to prosperity. Public opinion is becoming better educated on the subject of smoke pollution, and is recognising that clean air over an industrial area means better combustion and more efficient factories.

A factor which adversely affects the condition of our local atmosphere is the amount of smoke pollution carried across by wind drift from outside and adjacent areas, particularly to the eastwards of the city. These districts are highly industrialised, and the chimneys situated there are subject to little or no effective control owing to the lack of powers wide enough in scope to permit of the enforcement of more smokeless methods of combustion either in plant or in management. In these areas the only statutes available are those contained in the Public Health (Scotland) Act, 1897, Section 16, Sub-Sections 9 and 10, or, alternatively, Section 384 of the Burgh Police Act, 1892. In the former the onus of proof is on the Authority to prove that the smoke was “dangerous or injurious to health”—a most difficult matter indeed—and in the latter so many exemptions are included, particularly applicable to the types of trade carried on, that in most districts the Act is virtually a dead letter. The Local Authority may complain either of the density or volume of smoke emitted, but, where complaints are unheeded, the Authority is not likely to proceed further owing to the legal difficulties encountered. As a result, little progress is made, and this city has much of the surrounding smoke pollution added to its own quota. As has been stated recently in these reports when discussing other aspects of the problem, the only remedy lies in the obtaining of an Act without exemptions applicable to the country as a whole.

Summary of Work.—Constant supervision is maintained by the smoke inspectors over all chimneys other than household

chimneys within the city, and the following is a summary of the work done by them during the year:—

Number of observations of chimneys, ...	28,575
Number of inspections of steam boilers and other furnaces, ...	1,300
Number of intimations of excess smoke given, ...	328
Number of initial warning notices served, ...	22

Prosecutions.—During the year a total of 49 prosecutions were taken against offending firms for the excessive issue of smoke from the chimneys used by them or under their control. These cases are heard before the Stipendiary Magistrate in the Central Police Court. This figure includes both those reported by the smoke inspectors and instituted under Section 31 of the Glasgow Police (Further Powers) Act, 1892, and also cases reported by the Traffic Police operating under the Motor Vehicles (Construction and Use) Regulations, 1931. Technical assistance is afforded the Police in these cases, and evidence is given accordingly in defended cases. Of the total prosecutions taken, 45 were for first offences; three were for second offences; while one was for a third offence. The average penalties imposed were—1st offence, £1 3s. 6d.; 2nd offence, £1 8s. 4d.; while in the case of the third offence the diet was “deserted *simpliciter*.” The aggregate fines amounted to £57 5s. Although the maximum fine under the Glasgow Police (Further Powers) Act, 1892, is only £2 for a first offence and £5 for a second or subsequent offence if committed within one year of the immediately previous conviction, this fine was only imposed twice in first-offence cases. The Department recognises that prosecutions are necessary in certain cases, yet by no means is this procedure depended upon entirely in order to achieve improvement. In most instances sound practical advice based on training and experience is met with acceptance and welcomed by furnace users, and most of the improvements noted have been the direct result of advice offered

Small Vertical Steam Boilers.—The small vertical steam boiler again appears prominently on the list of prosecutions. These small units are veritable smoke producers under certain conditions which are obtaining in too many instances, especially in the central district of the city. It is the most uneconomical as regards thermal efficiency. It occupies but little floor space, is easily installed and removed, and, in consequence, is found in odd and obscure corners, being very popular with warehouses, restaurants, and small workshops. From a heating and smokeless standpoint it stands condemned, portability and first cost being its only recommendations. Constructionally it is most unsuitable

for the smokeless combustion of bituminous fuel, and yet this is the fuel most frequently favoured—invariably coupled with a defective draught. In most instances it is too small for mechanical stoking, apart from the question of cost. The use of a non-bituminous fuel such as coke or anthracite beans, coupled with adequate draught, is the only solution with this type of plant.

Improvements to Plant.—Owing to the present depression, plant owners and users are not inclined to embark on schemes of plant reconstruction unless where absolutely necessary or where it can be shown it will be to their own advantage. Nevertheless, the list of improvements made to plant towards smoke abatement which came within our notice during the year was fairly satisfactory. There are still plants in operation where during certain periods of the day a “peak” load comes on, and in others the continuous load is up to and over the rated capacity of the boiler. Under both these conditions the furnaces are overloaded, and, as such plants are most prolific smoke producers, it is essential that additional capacity be provided for by either increasing the boiler power or by substituting electricity obtained from public mains for steam as the medium on the motive power side. Again, in the case of heating boilers of various types and in certain process operations, the use of ordinary bituminous fuel is frequently most unsatisfactory by reason of its excessive smoke emission. The solution here is the substitution of one of the various grades of coke on the market for the raw fuel in use, together with an increase in intensity of draught where necessary by redesigned flues or increased height of chimney, or by the installation of an oil-fuel burning system, preferably automatically controlled. Alternatively, electrical heating furnaces may be adopted. In the latter case the cost of operation is invariably the determining factor.

The nature and extent of some of the improvements carried out during the year may be mentioned. The plant in the boiler-room of the Power House at the Central Station of the London, Midland & Scottish Railway Company consisted of four large “Lancashire” type steam boilers and necessary auxiliaries. This battery generated steam for the heating of the station, hotel, trains preparatory to departure during winter months, and also carried the load of the generating sets in the electrical Power House, and at certain periods of the day and evenings these boilers were working up to the limit of their capacity. All were hand-stoked, and the chimney had been the subject of recurring complaints and also of several prosecutions.

Eventually the Company decided on a scheme of reorganisation and reconstruction. All of the current is now being taken from public supplies, and the generating sets have been dismantled. Two of the boilers have been put out of commission and are now used as hot-feed supply tanks. The remaining two have been fitted with mechanical stokers, fuel-conveyor gear, recording instruments, economisers, &c. I was informed that the total cost was in the neighbourhood of £20,000. The chimney now is for all practical purposes smokeless.

Again, a well-known restaurant in the centre of the city had a vertical steam boiler attached to the kitchen. Excessive smoke emissions were frequent, and many complaints were received, followed by warnings and prosecutions. The management carried out a complete reorganisation of the kitchen, which is now arranged and equipped for electric and gas cooking. A new "Cochran" type vertical steam boiler of increased capacity has been installed, fitted with a mechanical stoker electrically controlled. A much smaller grade of fuel is now being burned, and yet the chimney is practically smokeless.

A large paper mill in the north-west district had the steam requirements met by two batteries of "Lancashire" type boilers, consisting of eight units—a large plant. All these boilers were hand-stoked with varying grades of fuel and were draughted by a very tall chimney into which were also led the spent gases from the furnace of a soda recovery plant. The chimney was most unsatisfactory, and was the subject of prosecution and many complaints. The firm during the year installed two large water-tube boilers, fitted with chain grate mechanical stokers and all the necessary auxiliary gear. These two boilers have a combined capacity much in excess of the eight "Lancashire" boilers, and the latter have been put out of commission, the new installation taking up all the load. There has been a great improvement in the behaviour of the chimney, and only on infrequent occasions is smoke emitted of such a density that the inspectors could take exception to the emission, and this is due entirely to the operation of the soda recovery plant.

The chimney connected with the boiler plant of a large leather tanning factory in the east end of the city was the subject of much complaint by adjacent residents, although the smoke emissions were not of a density or of a duration to warrant action being taken. The firm were informed of these complaints, and subsequently displaced the hand-fired plant by one of much larger capacity and mechanically stoked. This chimney is now quite satisfactory.

A large firm of wire weavers in the Govan district have replaced a remaining hand-stoked wire annealing furnace by one electrically operated subsequent to further complaints being made by the inspectors. Several previous conversions of a similar nature were noted in a similar report, and this firm has spent a large sum of money in this direction. These chimneys had been the subject of prosecution previously.

Instances such as the above are indicative of the substantial nature of some of the improvements made during the year, the aggregate result of which should be a further contribution to general atmospheric cleanliness.

Appended is a list of improvements and the headings under which they are classified.

No. of new steam boilers installed to give increased power, ...	9
No. of mechanical stokers fitted to steam boilers, ...	4
No. of secondary air-smoke preventers fitted to steam boiler furnaces, ...	4
No. of furnaces in which anthracite coke or other non-bituminous fuel has been substituted for ordinary coal, ...	24
No. of steam boilers adapted for the smokeless combustion of oil fuel, ...	1
No. of steam boilers replaced by electric motors (using public power), ...	6
No. of new chimneys erected or existing chimneys heightened to give increased draught to carry gases higher, ...	11
No. of improvements to plant not coming within any of the above headings, ...	17

Complaints.—The plant user of to-day has to exercise a greater measure of care than formerly did his predecessor. In spite of this, the number of complaints received relative to smoke emission, particularly from chimneys adjacent to dwelling-houses and business premises, remains persistently high. The past year was no exception, and much of the inspectors' time has been spent in endeavouring to abate the nuisance by removing the cause of complaint. The average householder is nowadays much less tolerant of smoke nuisance. Many of the complaints, particularly in the more central areas, had reference to smoke from short chimneys connected with the heating plants used by small workshops, stores, shops, churches, &c., and much time is spent frequently in locating the offender, even when an approximate address is given. It is difficult to understand why the erection of many of these chimneys is allowed in the position in which they are found—if indeed permission is sought at all.

The remedial measures generally advised, and invariably adopted, are removal of furnace or boiler to a more suitable position, raising of chimney, or substitution of less smoky fuel in the nature of anthracite coals or coke or a mixture of the latter with coal, always depending on the nature of the complaint.

Steam Wagon and Tar Melters.—Most of the owners of steam-propelled road vehicles are now aware that systematic observation is being maintained on the smoke emissions from these wagons, and, in consequence, the quality and type of fuel adopted has considerably improved as compared with that generally in use several years ago. For instance, excessive smoke is seldom noted while the vehicles are stationary as was frequently the case formerly, while drivers, due to repeated warnings, are now much more careful in the management of the boilers when their wagons are standing in public thoroughfares. In spite of these facts, the Traffic Police were very vigilant during the past year, and the prosecutions taken were almost up to the figure reported for the preceding year, quite a number being in respect of vehicles from outside areas. All of the excess smoke emissions were noted while the wagons were travelling along busy main thoroughfares. In a few cases the cause of the offence was the use of very smoky types of fuel, i.e., ordinary bituminous fuel of high volatility, while in most cases the immediate cause was unnecessarily heavy stoking, resulting in heavy emissions, even with semi-bituminous or so-called “tractor coals.” Over-stoking is apparently a weakness with steam wagon drivers and firemen, the pedestrians, traffic, householders, shops, &c., in the immediate vicinity suffering in consequence. At the expense of reiteration, it may be stated that only fuels of low volatility such as those of the South Welsh anthracite class, good quality gas coke, or one of the low-temperature carbonised cokes popularly designated “smokeless fuel,” or a mixture of either of these two latter with good quality semi-anthracite should be used. It has been demonstrated that these fuels are ideally suitable. Many wagon users object to their use, principally on account of increased bulk, but that is a factor being easily arranged for by other owners who do use them.

A road-contracting firm was prosecuted during the year for permitting the excessive issue of smoke from a pitch melter. In this case, as in recent cases involving these appliances, the stock of coke had been used up and a nearby supply of very bituminous coal was in use. The inspectors experienced little trouble from this source, as coke is now almost wholly the fuel in use, contractors being aware that where ordinary coal is used there is every possibility of trouble with heavy smoke.

Shipping in the Harbour.—The harbour areas being included in the ordinary observation districts, the river and docks were subject to both routine and special observation work during the year. As a result of preliminary observation, a number of ocean-going vessels and river craft had special attention given them, warning notices being served, and in two instances prosecutions being resorted to. Convictions were recorded in both cases. One case referred to an overseas cargo vessel owned by a local line; the other was in respect of a cross-river ferry. The latter proceeding has resulted in special attention being focussed on the question by the Authority concerned, and it is anticipated that lasting improvement will result. Ships' stokers frequently make an unfortunate practice of excessively heavy firing while in port, and this factor, coupled with the type of boiler generally in use, results in heavy emissions of smoke. Stricter supervision by the engine-room staff would in most cases ensure that the smoke emission was kept down to accepted standards. As a result of visits made by the inspectors, most of the companies have already circularised their ships.

Soot-Collecting Gauges.—The gauges from the nine stations situated at all points of the city are analysed monthly by the City Analyst. During 1932 the fall of atmospheric impurities, consisting of soot and dust, as indicated by the gauges amounted to an equivalent figure of 214·36 tons per square mile, which, compared with the previous year's figure of 262·16 tons, shows a decrease of 47·8 tons. During the month of February no record was available as the rainfall was negligible, but over the previous six years the precipitation for that month was well below the monthly average for the year.

If a figure for that month equal to the mean of the previous three years is included, the total for the year becomes 234·36 tons, showing a decrease of 27·8 tons as compared with the previous year. It is to be noted that the rainfall for the year was less than that during any of the preceding years, a factor likely to lower the amount of impurity deposited. Comparing this figure for 1932 with the average of the previous six years, i.e., 284·02 tons per square mile, there was a reduction for that year of 49·66 tons. The respective rainfalls were 946·41 mm. and 841·93 mm. A comparison between the six "summer" months and the five "winter" months gives the figures as 19·73 tons and 19·19 tons, the respective mean monthly rainfalls being 59·37 mm. and 97·15 mm., the latter rainfall being lengthy periods of heavy rain, and the former being "showers" at fairly frequent intervals. Appended hereto is a table giving the mean monthly deposit of each element of atmospheric pollution for the year.

Classes in Smoke Abatement, Boiler Efficiency, and Furnace Management.—Frequent reference has been made in past reports to the practical value of these classes carried on annually under the joint auspices of the Scottish Branch of the National Smoke Abatement Society and the Corporation of Glasgow. Continued evidence of this has been again afforded by the sustained large enrolments for the session just ended. The personnel of the classes is made up of stokers, boiler attendants, plant engineers, and others interested in the maintenance and efficiency of boiler and process furnaces. The classes—the only course of this nature at present organised in Scotland—meet on one evening of the week during the six winter months, September to March, the 17th session since 1910 having just concluded. The usual ordinary and advanced classes were maintained—a total of 24 lectures being given—while the fee was the nominal one of 2s. 6d. Visits were paid to large local plants of interest towards the end of the session, and the class examinations were held at the conclusion of the course. The total enrolment was 92, the same figure as last year, and the attendance for the session in both classes was 87·9 per cent. and 93·7 per cent. respectively—a remarkably high record. The written examination was held on 18th March, 35 men attending. Three prizes are allocated to each class, and certificates of competency are given to those candidates gaining 65 per cent. or over. Full attendance certificates are granted those eligible for same and not qualifying for a merit certificate. Fourteen men in the advanced and fifteen men in the ordinary class gained merit certificates, and a total of 38 men made full attendance. The prizes are presented at the annual social meeting of the branch convened at the beginning of May.

THOMAS M. ASHFORD,
Senior Smoke Inspector.

18th April, 1933.

AVERAGE DEPOSIT OF EACH ELEMENT OF ATMOSPHERIC POLLUTION FOR EACH MONTH OF 1932.

219

English Tons per Square Mile.

Month.	Rainfall in Millimetres.	Insoluble Matter.				Soluble Matter.				Included in Soluble Matter.				Total Solids.					
		Carbonaceous other than Tar.		Ash.		Total Insoluble Matter.		Loss on Ignition.		Total Soluble Matter.		Total Solids, 1932.		Sulphate as SO ₃ .		Chlorine as Cl.		Ammonia as NH ₃ .	
		Tar.																	
Mean of 9 Stations,	121.30	0.23	2.76	5.49	8.48	3.90	5.48	9.38	17.86	4.04	1.47	0.50	23.61	21.04	24.19	34.13	26.63	23.57	1926.
February,	No Rainfall.	No Precipitation Record.							20*				22.05	20.65	17.68	26.08	21.60	19.32	
Mean of 9 Stations,	47.32	0.30	4.42	10.01	14.73	3.31	4.63	7.94	22.67	2.73	0.83	0.23	19.99	22.54	21.51	24.58	18.58	21.48	
March,	73.46	0.30	3.16	7.43	10.89	3.30	5.92	9.22	20.11	3.07	1.11	0.20	20.56	19.65	20.88	18.03	24.85	18.63	
April,	69.95	0.08	2.83	5.71	8.62	3.23	6.22	8.45	17.07	2.61	0.46	0.45	32.94	17.12	22.64	24.56	22.17	20.97	
May,	12.89	0.26	6.67	8.94	15.87	1.22	2.59	3.81	19.68	1.10	0.23	0.07	23.73	20.26	23.81	28.41	31.25	19.92	
June,	78.65	0.13	3.56	9.23	12.92	3.92	7.20	11.12	24.04	3.36	0.45	0.32	25.23	22.11	17.73	20.97	26.87	29.90	
July,	30.70	0.16	3.52	9.48	13.16	2.11	3.78	5.89	19.05	1.61	0.22	0.13	16.60	26.49	30.07	23.08	54.45	20.79	
August,	90.55	0.24	2.92	4.62	7.78	4.55	6.09	10.64	18.42	2.81	0.90	0.23	12.45	22.70	15.10	18.25	25.16	19.82	
September,	118.96	0.09	3.20	3.37	6.66	4.10	6.80	10.90	17.56	3.24	0.84	0.47	21.97	21.71	26.13	31.28	32.86	22.33	
October,	71.80	0.09	4.12	5.43	9.64	4.67	7.46	12.13	21.77	3.26	2.77	0.22	23.97	24.67	29.42	23.85	19.90	39.94	
November,	126.35	0.25	2.59	5.19	8.03	2.39	5.71	8.10	16.13	2.82	1.26	0.30	19.06	28.64	29.04	23.63	13.12	19.16	
December,																			

Yearly Deposit in Tons per Sq.	841.93	2.13	39.75	74.90	116.78	36.70	60.88	97.58	234.36	30.65	10.54	3.12	262.16	273.58	278.20	296.85	317.44	275.83	
Monthly Mean of all Gauges, ...	76.54	0.19	3.62	6.81	10.62	3.34	5.53	8.87	19.53	2.79	0.96	0.28	21.85	22.80	23.19	24.74	26.45	22.99	

* Estimated, as there were no records available owing to low rainfall.

SECTION XII.

GENERAL SANITARY OPERATIONS.

DISINFECTION.

The following tables summarise the washings and disinfections carried out at Ruchill and Belvidere Disinfecting Stations during the year 1932 :—

	Belvidere.	Ruchill.	Total.
Number of washings, ...	12,054	10,129	22,183
Average number per day, ...	38.8	33.3	72.1
Articles washed and disinfected, ...	402,067	404,293	806,360
Average number of articles per washing	33.4	39.9	36.3
Fuel consumed (tons), ...	706	533	1,239
Fuel used per article (lbs.), ...	3.93	2.95	3.44
Soap and powder used per article (ozs.),	0.37	0.27	0.32
Disinfectant " "	0.55	0.54	0.54

NUMBER OF WASHINGS, ARTICLES DISINFECTED, &c., FOR YEARS 1921-32 INCLUSIVE.

	Washings.	Articles.	Sprayings.	Whitewashings
1921, ...	18,060	655,867	19,196	21
1922, ...	14,837	533,450	9,418	21
1923, ...	14,423	526,285	8,008	2
1924, ...	14,690	510,275	8,405	3
1925, ...	14,408	530,777	8,473	2
1926, ...	15,992	620,038	9,806	—
1927, ...	16,323	648,516	10,495	2
1928, ...	15,135	584,257	9,219	—
1929, ...	14,593	590,676	10,076	27
1930, ...	16,996	617,675	12,222	17
1931, ...	18,793	678,367	13,545	13
1932, ...	22,183	806,360	15,248	12

Books disinfected, 1,859.

Fumigation of Vessels.—Most of the fumigations of vessels for disinfection of rats are done by this department. Information regarding this matter is given in the report of the work of the Port Local Authority, which forms Section IX.

Disinfection of Second-hand Clothing, &c.—Disinfection of second-hand clothing for export to Ireland, as required by the regulations issued by the Irish Free State, continued to a reduced

extent throughout the year. In all, 561 consignments were disinfected and certificates issued, the total amount received in respect of charges being £130 16s. 4d.

A comparison with the figures for 1931 shows a marked decrease in the volume of the traffic which may be mainly attributed to the unsettled conditions obtaining in the Free State during the year.

Disinfection of Straw Coverings.—In order to comply with the regulations of various countries, the arrangements for the disinfection and certification of straw coverings were continued during the year. No additional names have been added to the list of those providing suitable chambers for this purpose, and the former arrangement whereby the Department is notified when a supply of packing is to be disinfected continued.

OFFENSIVE TRADES.

There were on the register of offensive trades in the city at 31st December, 70 businesses coming under this category, which is one more than the number at the end of the preceding year. The additional licence was issued in respect of a tallow-melting business in the eastern district of the city.

The nature of the businesses is shown in the following statement:—

	1932.	1931.
Bone boilers, ...	8	8
Tallow melters,... ..	21	20
Manure manufacturers, ...	8	8
Gut cleaners, ...	3	3
Hide and skin factors,... ..	8	8
Soap boilers, ...	11	11
Tanners, ...	7	7
Glue and size manufacturers,... ..	2	2
Horse slaughterer, ...	1	1
Knacker, ...	1	1
	70	69

Particulars regarding the administrative supervision of the premises in which these businesses are situated and of the renewals of registration and the new licence granted are given in the reports by the Divisional Sanitary Inspectors which follow.

GENERAL SANITARY OPERATIONS.

The reports by the Divisional Sanitary Inspectors are included in this section; they deal with the work of the department as given in detail in Table XXIII of the Appendix, which contains

tabulated particulars of inspections, nuisances, &c., in each municipal ward and for the city. References are made to the principal statistics for each division, and comments are made on the more important complaints or problems arising during the year.

CENTRAL DIVISION.

The cleansing and building up or the demolition of unused cellars has been continued, 122 being cleansed and built up and 53 demolished. They are a prolific source of nuisance, and this procedure should be a permanent improvement. Complaints regarding dirty stairs, closes, &c., are still numerous, and four thousand rotation cards were issued. Owners are more readily requesting the issue of cards. However, owners could themselves aid greatly in this respect by making out rotation cards, having them framed and affixed to a convenient part of the staircase. Where this is done, no difficulty is experienced in having the stairs kept clean. The general adoption by owners of a card such as is issued by the Workmen's Dwellings Company, which prescribes a definite rotation for each month of the year for each tenant as regards sweeping and washing, would greatly assist in removing the dirty stair nuisance.

It was found necessary in several instances to take proceedings in court. A dispute arose regarding the cleansing of a common close serving three tenements, where there were six main-door houses, whose occupants had the right to use the close for access to wash-houses and drying-green. Hitherto the owner had issued rotation cards from his office, calling upon the householders in the several upstairs houses to sweep and wash the close, and absolved the main-door tenants, an arrangement which worked quite well until a new tenant upstairs objected. The Stair Cleaning Bye-laws had then to be applied, laying the duty of cleansing the close upon the main-door tenants only. Two of the main-door tenants ignored the rotation and were convicted of an offence against the bye-laws. In another case an alien, who was charged, set up as his defence a denial of receipt of rotation card. He was, however, found guilty, and sentence was postponed until after his next turn, and the copy of the rotation card, produced in court by the inspector as evidence of the fixing of rotation, was publicly served on the accused in court.

Dog Nuisance.—Complaints of nuisance created by dogs on stairs and on streets are numerous. People who exercise their dogs while on a lead and permit them to create a nuisance are responsible for the animal's habits. This point was decided at the Western Police Court when the owner of a dog was fined 10s.

arising out of a charge under the Glasgow Police Act, 1866, the Acting Fiscal pointing out that "if the dog in question had not been on a lead there could have been no prosecution."

Blairdardie Quarry.—A considerable portion of this deep quarry is still unfilled. Its close proximity to the Knightswood Housing Scheme makes it a potential source of nuisance, depending on the material deposited in and around it. For instance, in the autumn offensive smells of a serious and penetrating kind were caused by the dumping of barnacles, the scrapings from the hulls of ships. An effort was made to prevent nuisance by covering the deposits with earth, but it was ultimately arranged to have this material carried out to sea.

Unpaved Courts.—Unpaved courts and those in which the paving has become holed and broken up continue to be a prolific source of nuisance. The usual remedy of spreading ashes has a merely temporary effect. In several cases owners have been persuaded to pave the courts.

Privies.—With the construction of the new bridge at Temple, the sewer, which has also been carried across the canal, has rendered possible the provision of water-closet accommodation in lieu of existing privies in this area. Owners of properties in which privies exist have been advised of the facilities now available, and, in some cases, w.c.'s have already been substituted; in others the work of conversion is under consideration.

Smells in Basements.—In December many complaints were received of smells in basements, several of these being premises which had been built or reconditioned in recent years. After much investigation by several departments, it was ascertained that the smells, which were due to carbon bisulphide, had probably gained access to the sewers from an alkali work. The nuisance coincided with periods of abnormal rainfall when the sewers were running full. As most of the street gullies are trapped and many of the manholes are fitted with solid covers, it is likely that the flow of water forced the air of the sewer through the soil into the basement through old sewer connections which had been discontinued. When reconditioning is carried out, the drain may simply be broken up in the basement and the outlet not effectively sealed, so that gases under pressure may find their way through this portion of unused drain from the sewer into the basement.

Drainage.—In addition to the routine smoke-testing of drainage systems suspected of being unsatisfactory, the supervision of new work was required in respect of hungalews at

Blairdardie, the Corporation bus garage at Knightswood, a large picture-house in Dumbarton Road, and a block of tenements of modern design in Byres Road. In the central area the new buildings completed were the Corporation Electricity Department headquarters in Waterloo Street, the Central Agency extension in St. Vincent Street, "The Gordon"—Messrs. Craig's large restaurant in Gordon Street—and several smaller buildings. Work of this nature presents many difficulties in drainage design and calls for special supervision. In the course of inspection during alterations of a tenement in Partick, a lavatory trap of new design was found installed and, on investigation, was found to be of the old "D" type, and therefore could not be accepted. Representations were made through the plumbers' merchants to the manufacturers in England, resulting in the production of a trap of an improved design, which was accepted.

Bakehouses.—Considerable improvement can be recorded in the sanitary condition of bakehouses. Excluding dairy premises in which baking is done on a "hot plate," there are 103 bakehouses on the register. Of these, 61 are factory bakehouses and 42 workshops; 38 are classed as "retail" bakehouses. The term "retail bakehouse" is defined in the Factory and Workshop Act, 1901, as "any bakehouse or place, not being a factory, the bread, biscuits, or confectionery baked in which are sold, not wholesale, but by retail, in some shop or place occupied with the bakehouse." Many premises which formerly came within this definition are now excluded because the place has been converted into a factory by the introduction of mechanical power, usually electricity. Formerly only retail bakehouses came under the supervision of the Local Authority, but since 1921 all bakehouses are under its purview. In the 103 bakehouses, which are mostly small concerns, there are 1,640 employees, 868 males, 677 females, and 95 young persons. In 18, only one person is employed, eight have over 20 employees, while only four have over 100 employees. The best type of bakehouse is constructed with concrete floors, tiled, brick or plastered walls, and plastered ceilings. Seventy out of the 103 bakehouses have concrete floors; the walls of 93 are of brick or are tiled or plastered; and in 72 the ceilings are plastered. The floors, walls, and ceilings in the others are of wood, which cannot be maintained in such a satisfactory sanitary condition.

The Bakehouse Welfare Order, 1927, was issued by the Home Secretary, requiring the provision of washing, &c., facilities for employees. The enforcement of this Order is in the hands of H.M. Inspector of Factories, and some improvement has been effected. Of the above 103 bakehouses, 33 have separate facilities

for washing and 58 have dressing-rooms separate from the bakehouses. There are 32 with both washing and dressing facilities separate from the bakehouse. Nevertheless, much remains to be done in this respect.

Underground Bakehouses.—In 1904, the occupiers of underground bakehouses had to obtain a certificate from the Medical Officer of Health as to the suitability of the premises as a bakehouse. At that date there were 60 underground bakehouses in the Central Division. Of this number, 24 were refused a certificate and ceased to exist, 36 were certified as suitable. Since that date, 20 have been discontinued, leaving 16 underground bakehouses at the present time. Those remaining are fairly well constructed, though none are large. All have floors of stone or concrete and plastered walls; in five the ceilings are of wood; in eight, electric fans have been installed to aid in their ventilation. In all, 79 persons are employed—64 males, 10 females, and 5 young persons. Lack of space renders it difficult to obtain separate facilities for ablution and dressing. Only in five of the underground bakehouses are separate washing facilities provided, and separate dressing-rooms are provided in nine cases.

In some bakeries the making of breadcrumbs for sausage-making, fish-dressing, &c., is carried on. A separate business for this purpose was established in Partick, where stale or misshapen bread is dried and ground into crumbs. As the machine used for the purpose permitted dust to pervade the factory to an excessive degree, the proprietor was persuaded to instal an electrically-driven machine. Not only is the dust nuisance entirely eliminated, but the work of grinding and grading the material is done with greater efficiency. In a railway goods yard in the same area a wooden erection was found in use as a bakehouse. There was no water or w.c. accommodation—water was obtained from a Kennedy well 30 yards distant. As the premises were small and of such a construction that the law relating to painting and limewashing could not be carried out, the occupier vacated the premises.

Restaurant and Tea-room Kitchens.—These are closely akin to bakehouses, and, on the register, there are 288 such places—163 restaurants, including 36 licensed places, 40 tea-rooms, and 85 fish restaurants; 1,270 persons are employed in these kitchens—274 males, 936 females, and 60 young persons. Sixty-seven of the kitchens are underground, 45 on top, and 176 on the same level as the dining-rooms. It is interesting to note that in 139 of the establishments all cooking is done by gas, while only in five cases is the cooking done by electricity. In 72 places coal is used for cooking purposes, and in a similar number of establish-

ments both coal and gas are used. The employees in 137 of the kitchens are provided with ablution facilities separate from the kitchen, 152 with dressing-rooms, and in 130 establishments both washing and dressing facilities are provided.

In restaurant kitchens the greatest difficulty experienced is to secure ventilation adequate to keep the air at a reasonable temperature. When natural means of ventilation are provided—opening windows, flues, &c.—the workers fail to maintain ventilation, alleging draughts; and when mechanical means are provided the owner frequently refrains from keeping the apparatus in operation on the score of expense.

Common Lodging-houses.—The monthly inspection of common lodging-houses has been continued throughout the year. In no department of the housing problem has a more complete transformation taken place during recent years than in these lodging-houses. No house was too miserable for the purpose, and there was no limit to the number admitted. To-day a high standard of cleanliness has been attained. Outside of public institutions, it is doubtful whether anywhere among the poorer classes or even among those higher in the social scale there exists a standard of house cleanliness comparable with that of the better class common lodging-house. The standard of privacy and other facilities obtainable to-day was undreamed of in earlier days. The common dormitory with open beds or “bunk” beds is giving way to the cubicle. Out of 2,751 beds, only 232 are open beds in common dormitories, and there are now only 80 “bunk” beds.

In all the lodging-houses, with the exception of the two smallest (which contain between them only 48 beds), a hot and cold-water supply is available. Eight of the thirteen houses have a shop on the premises for the sale of groceries and provisions, and in five cases hot dishes are procurable in the shop. In all the houses a “hot-plate” exists for cooking purposes, and, in addition, in two there is a restaurant for supplying meals. In one case during the year, in the interests of discipline, it was found necessary to insist upon the appointment of a new manager.

“Ticketed” Houses.—The “ticketed” house is rapidly disappearing. At present there are 2,231 houses on the register—1,121 single apartments, 1,089 of two apartments, and 21 of three apartments. To indicate how rapidly these numbers are falling, it may be mentioned that 1,270 “ticketed” houses have been demolished in slum clearance operations since 1923—612 single apartments, 615 two apartments, and 43 of three apartments. During the year 8,685 night-time visits were made, and 830 cases

of overcrowding were found, or 9·55 per cent., as against 9·00 per cent. found in 1931. In pre-war days the percentage was 6·98 in 1913 and 6·58 in 1914. The following table shows the overcrowding in "ticketed" houses during the past ten years:—

Year, ...	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Visits, ...	15,389	15,880	13,317	3,488	19,435	15,070	14,824	14,793	12,293	8,685
Cases found,	1,830	1,622	1,419	352	2,162	1,829	1,474	1,215	1,107	830
Percentage,	11·24	10·21	10·59	10·09	11·12	12·13	9·94	8·14	9·00	9·55

Housing.—During the year, from all causes, 20 properties, containing 226 houses, have been demolished, 44 basement houses have been closed, and 69 houses (other than basements) have been vacated. No opportunity occurred during 1932 of dealing with unhealthy areas as clearance or improvement areas, but in single and in small groups 112 houses were represented as unfit for human habitation. In only two cases was opposition offered, and these were continued for further consideration. Undertakings not to use the house for human habitation were accepted or demolition orders passed. Meantime the reconditioning or, at least, the improvement of older houses is being carried on. Many have had light bathrooms provided, and hundreds have had hot water installed.

Rehousing Schemes.—The lady inspectors report as follows on the various schemes:—

(a) *Yorkhill Scheme.*—The occupants of Yorkhill Housing Scheme continue to maintain a high standard. Despite unemployment and illness the cleaning period was hailed with enthusiasm. The apartments are not all furnished or inhabited, but they are in clean condition. There still remain a few families who require constant supervision, and, in a recent interview with the caretaker, a method of co-operation was arranged. Bugs were found in one house, but these were successfully dealt with by the Improvements Department workmen. Only one eviction occurred during the year due to non-payment of rent. (b) *Scotstoun Scheme.*—This scheme is, on the whole, maintaining its standard of cleanliness. During the past year several of the best tenants have left, mostly for intermediate or other houses. The incoming tenants, however, although in poor circumstances, are doing very well and appear to be appreciating their new houses. Unemployment is a serious handicap. Floor-covering in some cases is impossible, and in more than one instance the walls have been painted or papered, one or two at a time, over a number of weeks, as the tenants could only afford a small weekly outlay for that purpose. (c) *Whiteinch Scheme.*—This scheme was occupied at the end of 1931 by tenants from the Calton district. The majority are responding to their new environment. The others

are decidedly disappointing, but with extra care and supervision it is hoped that they will improve. At the beginning there was some trouble with bug-infested pictures, but they have, to a large extent, been destroyed. All the tenants are very poor, a number of them coming from farmed-out houses, and consequently bringing with them little or no furniture or bedding.

WILLIAM ROY,
Divisional Sanitary Inspector.

16th March, 1933.

NORTHERN DIVISION.

The nuisances dealt with during the year are detailed in the Appendix. An unusual complaint by a tenant in the outlying area adjoining the city boundary referred to the infestation of his house by caterpillars. The insects, which were identified as the caterpillar of the hay moth, gained access by the doors and windows, and the source was found to be a number of haystacks in a field adjoining the dwelling-house. An attempt to entangle the invaders by spreading tar over their line of advance was made by the tenant, but this proved unsuccessful. The obvious remedy was the removal of the stacks, but, as this was impracticable at the time, the owner proposed to isolate the insects by cutting trenches around the stacks and filling them with water. Before that operation was started, however, nature came to his assistance, and the passage of the caterpillar into the cocoon stage provided, at least, a temporary remedy. Another "insect" complaint cropped up in one of the new housing schemes where a house was found to be infested by the furniture mite. As all the apartments and a large part of the furnishings were heavily infested the eradication of the trouble was a matter of extreme difficulty. It was even found necessary to remove the floor coverings, and only after the house had been repeatedly treated with formalin and sulphur, the upholstered furniture fumigated, and the bedding passed through the steam disinfecter, were the insects finally exterminated.

The foul condition of a burn, or ditch, which runs near one of the latest housing schemes was the subject of investigation. Here it was found that the nuisance was due to an overflow of sewage into the burn from a chokage in the outflow pipe of a septic tank. This tank, into which the drainage of some twenty dwelling-houses discharges, was buried under the surface of the ground, and although, according to report, it had not been opened up for about 17 years, it was found to be in a remarkably clean

condition. The removal of the cause of chokage abated the nuisance. Enquiries were also made with reference to complaints of offensive smells from an oil-refining establishment. Some ground for complaint was found, and the firm adopted a process of passing the offensive fumes through water with a view to rendering them innocuous, but it has not yet been conclusively proved that this has had the desired result. Another complaint of smells was made by the occupier of a house situated immediately over a small baking business carried on in a back-shop. The provision of a cement ceiling in the bakehouse was called for, in terms of the Building Regulations Act, and subsequent inspections revealed no ground for further action.

Drainage.—The drainage and plumber work in connection with new housing schemes was supervised and 528 applications of the smoke test made. Tests were also applied to the drainage of 208 old tenements in which there was reason to believe defects existed, and, as a result, the drains were completely renewed in seven instances and 105 pan water-closets were replaced by wash-down water-closets. Alterations involving additions to drainage in connection with 86 shops and other premises also received attention.

Ticketed Houses.—Overcrowding.—Slum-clearance operations are gradually reducing the number of ticketed houses, and the number on the register at the end of the year was 4,889. Night inspections of these houses revealed no appreciable diminution of the percentage overcrowded. Many examples of families living under grossly overcrowded conditions in both ticketed and non-ticketed houses could be given, but the latest census figures sufficiently indicate the gravity of this phase of the housing problem. Recent enquiries as to housing accommodation by families who have returned to the city from abroad may be indicative of an influx of population likely to lead to increased overcrowding.

Slum Clearance.—Demolition Orders were made with regard to 59 houses, 16 of which were uninhabitable houses situated in a tenement dealt with by the Master of Works Department as a "dangerous building." Seventy-one families whose dwellings were dealt with by Demolition Orders, either this year or the previous year, were rehoused; eight families were "substituted"; and three found other accommodation. A Clearance Order involving 223 houses was made regarding an area in Garscube Road, and the survey of an area in Provan Ward, which has since become the subject of a Clearance Order, was completed. These schemes, if confirmed, will together include 819 houses and a population of 3,258.

Slum Clearance Rehousing.—During the year 411 additional houses came into occupation, and the total number in the division is now 2,546. These are distributed over 11 separate schemes. Two hundred and sixteen families have been rehoused in schemes built on the cleared sites at Dobbie's Loan, Dunblane Street, Cathedral Street, and Whitelaw Street. The whole of the houses were systematically inspected, and the condition in which they were kept throughout the year is detailed elsewhere in this report.

The following tables, which have reference to 493 of the families transferred to the recently occupied schemes at Gairbraird Avenue and Whitelaw Street, show the improvement effected in respect of overcrowding. This is most striking in the case of 287 families formerly occupying single-apartment houses, an average of 4·5 persons per apartment having been reduced to about 1·6. On a standard of three persons per apartment and sex separation at ten years of age, 72 per cent. of these single-apartment houses were overcrowded. From Table II it will also be observed that in some cases a standard of three persons per apartment has not been attained in the new houses:—

TABLE I.

Old Conditions.				New Conditions.			
Size of Houses Vacated.	Number of Families.	Population.	Average Number of Persons per Apt.	Size of New Houses.	Number of Families.	Population.	Average Number of Persons per Apt.
1 Apt.,	287	1,294	4·5	2 Apts.,	249	818	1·6
2 Apts.,	191	914	2·4	3 Apts.,	244	1,482	2·0
3 Apts.,	15	92	2·0				
Totals,	493	2,300	3·2		493	2,300	1·9

TABLE II.

SHOWING THE NUMBER OF PERSONS IN THE FAMILIES AND THE SIZE OF THE HOUSES TO WHICH THEY WERE TRANSFERRED.

Number of Persons in Household.	Number of Two-Apartment Houses.	Number of Three-Apartment Houses.
1	3	—
2	64	3
3	81	9
4	65	31
5	32	58
6	4	55
7	—	37
8	—	29
9	—	12
10	—	5
11	—	4
12	—	1
Totals, ...	249	244

TABLE III.

OVERCROWDING IN HOUSES VACATED.

Size of Houses.	Number of Houses.	Number Overcrowded on Standard of 3 Persons per Apartment and Sex Separation at 10 Years.	Percentage Overcrowded.
1 Apt., ...	287	208	72
2 Apts., ...	191	54	28
3 Apts., ...	15	2	13
Totals, ...	<u>493</u>	<u>264</u>	<u>54</u>

TABLE IV.

AGE DISTRIBUTION OF INMATES UNDER 15 YEARS IN THE HOUSES VACATED.

287 One Apartment.			191 Two Apartments.			15 Three Apartments.		
-5	-10	-15	-5	-10	-15	-5	-10	-15
282	225	121	176	160	80	9	14	10

Repair of Houses.—Notices with reference to disrepair in 1,029 houses were issued, and the required repairs subsequently made.

Reconditioning of Houses.—Several individual houses were modernised to the extent of having up-to-date bathrooms added, but the most noteworthy example of reconditioning was carried out in a four-storey tenement in Townhead which contained two houses of four apartments in each flat. These houses had dark, internal water-closets and were without baths, and improvement was effected by dividing one of the bedrooms in each house into two compartments, one of which became a scullery entered from the kitchen and the other a bathroom entered from the lobby. Interior grates and hot-water supply were provided, the drainage renewed, and the property generally thoroughly overhauled and put into an excellent state of repair. No information with regard to the cost of modernising existing dwelling-houses is available, but no doubt cost is in many cases a formidable barrier to the undertaking of such operations.

Sub-Division of Houses.—In only a few cases was sub-division involving reconstruction carried out. The most outstanding instance was the alteration of the three upper flats of a tenement containing two houses of four and five apartments in each of the flats. These were divided into houses of two and three apartments with sculleries and modern bathrooms. The conversion

of large, self-contained houses, many of which have been unoccupied for considerable periods, into what are known as service flats, is a type of sub-division of which there are now a good many examples. Such houses are usually sub-let in single rooms, furnished or unfurnished, with common bathrooms, &c., on each flat. Facilities for cooking are also provided. No objection can be made to this method of providing additional housing accommodation, so long as the apartments are for occupation by single persons or couples, but there are a few instances of rooms sub-let on this system and occupied by families, and to that there is serious objection. The letting of single rooms to families is contrary to the spirit of the Housing Acts, but there is a danger that, so long as there is a scarcity of the smaller type of house, the practice may extend.

Farmed-out Houses.—Slum clearances carried out within recent years have greatly reduced the number of these houses, and during the past year other 12 were dealt with by Demolition Orders. Only 24 now remain on the register, and these were regularly supervised. It is difficult, in some cases, to decide whether houses should or should not be declared to be farmed-out houses, and such a case coming under notice recently is that of a four-apartment house, the apartments in which are separately occupied—two of them by families, one by three men, and the other by the tenant. The rooms occupied by the families are sub-let by the tenant as furnished or partly-furnished apartments, and the charges for these are 5s. and 7s. per week. The yearly rental of the house as per Valuation Roll is £22 10s. The sink and water supply are in the apartment occupied by one of the families, and the water-closet, which is entered from the lobby, is for the common use of the occupants. By declaring this house to be a farmed-out house, the provision of a sink, water supply, &c., in each of the apartments could be required in terms of the bye-laws and the conditions to that extent improved, but, if that course were taken, sanction would be given to a practice which cannot be regarded as desirable, but which, unfortunately, there is no power to prohibit. In the case referred to, the owner has undertaken to effect a change of tenancy rather than have the house declared to be a farmed-out house.

Offensive Trades.—There was no variation in the number of these as compared with the previous year. Routine inspections were carried out and no serious nuisance called for attention.

Factory and Workshops Act.—Periodical visits were made to bakehouses, workshops, and workplaces. Where necessary, notices, usually with regard to the statutory cleansing of walls and ceilings, were issued and subsequently complied with.

Following representations to the owners, a trough-closet in connection with a workshop was abolished and wash-down water-closets substituted. The dwelling-houses of homeworkers were also supervised. Homeworkers numbered only 49 this year, a small number as compared with past years—no doubt a reflection of the prevailing industrial depression.

Common Lodging-houses.—These houses, of which there are six—all for men—were regularly inspected, 89 day visits and 17 night visits having been made. They were well conducted, and only a few minor irregularities required attention.

Sanitary Conveniences.—The following is a statement with regard to the number of common water-closets, privies, &c., as at 31st December, 1932:—

Nature of Convenience.	Number of Tenants served.					Totals.
	1	2	3	4	5 or more.	
Water-closets, ...	—	1,551	5,682	2,059	472	9,764
Sinks and water supplies outwith dwelling-houses, ...	158	148	6	—	—	312
Dry closets, ...	46	11	—	—	—	57
Privy middens, ...	16	7	—	1	15	39
Ashpits, ...	—	6	5	2	410	423

Five dry-closets were abolished during the year and four water-closets substituted.

Cleansing of Storage Cisterns.—The greater number of the cisterns for dietetic water supply in tenement property are situated in the higher parts of Springburn and Cowlairs Wards. In these Wards 592 cisterns were cleansed as a result of the issue of notices to the owners concerned.

Rent Restrictions Act, 1923.—Twenty-nine applications for certificates in terms of Section 18 were received, and of these 27 were granted and two refused. Applications by owners for reports in terms of Section 5 (2) numbered eight, and all were granted.

General.—Other routine duties carried out by the inspectors and referred to in the Appendix do not call for special comment.

J. H. PATTERSON,
Divisional Sanitary Inspector.

30th March, 1933.

EASTERN DIVISION.

A steady, if slow, improvement is manifest in the sanitary condition of the Division, due in some degree to the large rehousing schemes completed in recent years, which have mostly been built on sites formerly occupied by slum dwellings. Although much clearance remains to be effected, the time has come when large area schemes such as the Calton Scheme may be considered a feature of the past. The association of nuisances with slum dwellings is obvious where water-closets, and sometimes sinks and water supplies, are used in common by a number of people. The new modern house, provided with its own water-closet and other sanitary fittings, is better taken care of, and nuisance is less likely to occur.

It is now about twelve years since the post-war building of houses commenced in this division, and since then about 6,000 houses have been built, all provided with baths. Among, approximately, 50,000 houses in the Division, 11,841 are provided with baths, the corresponding figures of twelve years ago being 49,000 and 5,841 respectively.

Nuisances.—The nuisances removed or abated, numbering 15,867, are detailed in the Appendix. The majority were of the usual types associated with populous districts, but a few were of an exceptional nature, such as the following. Gases escaping from a large chemical work caused annoyance to the people living in the vicinity, and were made the subject of investigation by the Chief Inspector of the Department of Health under the Alkali, &c., Works Regulations Act. After careful inspection of a condensing plant or wash-tower connected with a superphosphate plant, he recommended certain improvements for the condensation of the acid gases. This wash-tower was, in his opinion, comparatively efficient, giving a condensation of 97 to 98 per cent. of the acid in the superphosphate gases. The usually accepted standard for this type of wash-tower is 95 per cent., but he thought that a much better condensation than this could be obtained with suitable plant and careful supervision. In view of the close proximity of the outlet of the superphosphate scrubber to dwelling-houses, and also of the fact that complaints had been made against the fumes emitted from the wash-tower, the company were persuaded to overhaul and re-design this plant. A subsequent inspection showed that by providing a more tortuous path within the wash-tower for the gases to pass through, and by substituting more effective rose-sprays, better condensation took place with a considerably less consumpt of water, so that the efficiency had been increased to over 99 per cent., whilst less than 0.015 grains of acid per cubic foot of exit

gases was being emitted to the atmosphere. Since the alterations were made, the working of the plant in question has been so far satisfactory.

Smoke nuisances from two herring kippering establishments were dealt with. In one case the nuisance was abated, and in the other the occupier removed to more suitable premises. These businesses were close to dwelling-houses, which were being polluted with smoke issuing from louvred openings in the roof while the smoking of herring was in operation. These are instances of business concerns situated on sites quite unsuitable for work of this nature because of the contiguity of dwelling-houses, and suggest the zoning of works of this kind in places where they are not likely to give offence.

A serious flooding took place early in the year in the vicinity of Westmuir Street as the result of an exceptionally heavy rainfall, and a number of houses were flooded. The more seriously affected houses had been scheduled as uninhabitable and would ultimately have been dealt with by closing orders, but the damage done to them by the flooding accelerated action, and they were immediately closed for human habitation. The tenants were rehoused by the Corporation. The Camlachie Burn, which is in the same district, overflowed its banks, and when the water had receded the riparian owners for a considerable stretch of the burn were called upon to remove silt and any obstructive material from its bed, which they did without unnecessary delay.

An infestation of the "owl midge" was discovered and successfully removed from a ground flat dwelling-house. Among other likely breeding-places the enclosed space under the kitchen sink was examined and found to harbour a large number of larvæ. After a new granolithic floor had been laid under the sink in lieu of an old wooden one, which was damp and decayed, the infestation ceased.

Rat Destruction.—The usual circulars were sent out as in former years prior to "Rat Week" to the occupiers of premises known or likely to be rat-infested, asking that special efforts be made during that week to exterminate rats, and the results were very satisfactory. Of the many devices in use for the extermination of vermin, there is one which may be new to those interested in deratisation, and which was applied most successfully in rat-infested premises where there existed an underground brick-built tunnel through which steam pipes were laid. The owner of the premises recognised that this tunnel was an admirable place for rats to nest in, and as he possessed a motor car, it occurred to him that he might inflate the exhaust gases

from it into the tunnel, which he did with the following result:—The gas sent a number of rats—unfortunately the number was not noted at the time, but it was said to be fairly large—to the surface of the ground in a dazed condition, where they were speedily killed by dogs specially kept for ratting purposes, and it is reasonable to assume that a number met their fate within the tunnel. Like other forms of gassing, however, great care must be taken to safeguard the operators and others, but to those who have cars and the misfortune to be responsible for rat-infested premises, here is a means of applying, where that can be done with safety, a most effective and easily obtained gas.

On several occasions advice was given as to the best practicable means to make premises rat-proof. Two outstanding cases in which the premises were badly infested were successfully dealt with by sealing openings in the external walls under the floors through which electric cables and drains passed. The rats in both of these premises were evidently travelling alongside cables and drains laid under the footpaths and gaining access to the under-floor spaces of the buildings through the openings in the external walls made for these service fittings. Poison is often employed when the sealing of one “run” may be effective. For instance, in a public building the sealing of a single hole under the ground floor in an external wall would have prevented further infestation. Instead of this poison had been used, and the smell caused by the dead rats gave rise to nuisance which had to be searched for.

Drainage.—The drainage of the Division as a whole is good. The City Engineer caused a new 18-inch pipe sewer to be laid in the Shettleston and Tollcross district to relieve the existing sewer, which during heavy rainfall became surcharged, and flooding of a low-lying part of the area resulted. No further flooding has taken place. The smoke test was applied on 458 occasions to the drainage and plumbing systems of 328 old and new buildings for the discovery of defects, which, when found, were made good. Seventeen water-closets of an old and obsolete type were replaced by modern wash-down conveniences. Five water-closets were provided in business premises in lieu of two pan privies, and six business premises were provided with water-closets where none previously existed.

Overcrowded Houses.—Overcrowding is still a problem to be overcome, although the provision of new houses has, to some extent, relieved the situation. Of the seven wards in the Division, the 1931 census shows that in five of these there is an average of about three persons to each single-apartment house, and that, in the remaining two wards, the average is slightly

less. When averages are set aside, however, there still exist in the more densely-populated districts groups of houses where overcrowding is serious, as the following details of 880 houses situated in two small areas show. Taking three persons per room as a standard, 246, or 46 per cent., of the single-apartment houses are overcrowded; 101, or 29 per cent., of the two-apartment houses are overcrowded; and no overcrowding exists in the three-apartment houses:—

Size of House.		Number of Inmates.													
Apartments.		1	2	3	4	5	6	7	8	9	10	11	12	13	14
One, ...	...	85	101	95	80	68	51	31	8	4	4	—	—	—	—
Two, ...	...	9	44	40	39	62	43	36	22	21	13	5	1	2	1
Three,	...	—	—	1	2	3	2	3	—	1	—	—	—	—	—

Ticketed Houses.—There are 2,740 ticketed houses, a reduction of 106 since the previous year, and 2,738 of these were visited during the night for the detection of overcrowding. In 396 cases, or 14 per cent., of the houses visited, overcrowding was discovered, and the worst case was that of a single-apartment with an excess of six persons. The extent of unemployment among those occupying the 396 overcrowded houses was almost 87 per cent.

Farmed-out Houses.—There were at the end of the year 103 houses on the register, a reduction of 20 houses.

Common Lodging-houses.—The numbers are the same as the previous year, viz., six for males and five for females. No overcrowding was found, and the general cleanliness and conduct were fully maintained. The majority of the beds are in cubicles, to which direct sunlight does not penetrate. On the other hand, they permit of privacy, which is valued in a lodging-house.

Reconstruction of Houses.—The making-down or the reconstruction of larger empty houses in tenements has not been considerable during the year, although those so altered have let readily. Owners are somewhat reluctant to carry out such work on a large scale. In one tenement where three large houses, with a total annual rental of £153 10s., were made into six of three apartments each, with modern conveniences, the houses, after alterations, were readily let, the total rental being £205. Of other properties in which reconstruction took place, details of the most outstanding are given:—(1) Two houses of seven apartments were made into four houses of three apartments, with bathrooms. The total annual rental in this case was unchanged. (2) Two houses of six apartments were made into two houses of three and one of four apartments, with bathrooms. In this case the total rental was increased after the alterations by £6 5s.

per annum. (3) Six houses of six apartments were made into nine of three apartments, with bathrooms, and the total annual rental was increased by 30s. In each of these cases, the houses in their original size had been unlet for some considerable time, but when the alterations had been completed tenants were apparently readily found.

Slum Clearance Schemes.—Of the 1,288 houses included in the Calton Improvement Scheme, all have been demolished, with the exception of one tenement with four tenants; and some six or seven new tenements for rehousing purposes are in course of erection on part of the cleared area. As the majority of the old houses in this scheme were bug-infested, great care has been taken in the process of demolition to scorch the infested woodwork with blowlamps, and by that means prevent the transference of bugs to unaffected quarters, as some of the woodwork was being stolen and made into firewood for sale to householders. Only one house so far has been demolished in the Old Shettleston Road Clearance Scheme, where 131 houses are affected. A clearance resolution was made by the Corporation for a scheme involving 168 houses in and around Landressy Street. Another somewhat larger area in Dalmarnock Ward is being surveyed and will shortly be completed. Many of the houses in this area are very old and beyond repair. Closing or demolition orders were made in respect of 84 houses, details of which are contained in the Housing Section.

Rent Restrictions Acts.—The applications for certificates by tenants of dwelling-houses in respect of disrepair numbered 138 (130 granted and 8 refused), and 28 applications were made by landlords for reports as to satisfactory repairs on houses where the tenants were in possession of rent certificates.

Rehousing Schemes.—There are now 2,572 houses occupied in rehousing schemes, and these have been regularly visited by the nurse inspectors for the purpose of maintaining a reasonable standard of cleanliness. Despite the depressing times as the result of unemployment, the majority of the tenants have kept their houses very satisfactorily. The usual changes in a number of houses from a "clean" to a "fair" category or vice-versa have been experienced, but these changes have not been more considerable than in former years. It is satisfactory to note that, of the total number of houses occupied in the various rehousing schemes, 1,925, or 74 per cent., were clean; 601, or 23 per cent., were fairly clean; and 46, or 1.78 per cent., were so unsatisfactory as to be categorised as dirty.

Offensive Trades.—The number of offensive trades was increased by one during the year. The new business is that of a tallow-melter, for which sanction was given to establish, and it is the only one of its kind in Glasgow in which condensation and chlorination are used for the destruction of effluvia arising from the process of manufacturing the tallow. A bone-boiler had to be warned to discontinue the parboiling of bones, which were for subsequent transportation. As the parboiled bones were being withdrawn from the digesters on to the floor in a steaming condition, the effluvium escaped into the atmosphere and would no doubt, if the practice had been allowed to continue, have been the subject of complaints. The increased consumption of mutton because of its cheapness was reflected by the increased activities in several branches of the offensive trades, such as those businesses which deal with sheepheads and gut. In spite of this, however, many of the manufacturers suffered from the general trade depression, and their premises were either temporarily closed or were working shorter hours. Considerable improvements have been effected in some of the older establishments as the result of suggestions made for the promotion of better conduct and management. The trades in which heat is required for the purpose of boiling or melting animal matter require constant supervision, as effluvium from hot material will travel a considerable distance, but with proper apparatus for the destruction of these hot vapours, there should be no nuisance. Within recent times, however, new housing schemes have developed in the neighbourhood of some tallow-melters' premises, so that greater supervision of these places has been necessary. While complaints have been by no means numerous, those that have been made were, when investigated, either the result of a mechanical breakdown or failure to use the plant to its best advantage. A good supply of water is essential, and as the quantity used is considerable there is a temptation to reduce cost by turning off the supply to the condensing plant, a practice which invariably creates nuisance. New bye-laws are being drafted which aim at securing the proper functioning of plant and other important measures, such as limiting the quantity of raw material to be received to the working capacity of the installation and preventing the withdrawal of the contents of digesters or boiling pans at a high temperature on to floors.

Tents, Vans, Sheds, &c., used for Human Habitation.—Five applicants other than travelling showmen were granted renewal of permission to use ground for the accommodation of inhabited vans. In each case one van was accommodated, and the sanitary arrangements were satisfactory. About 48 vans occupied ground at 843 Gallowgate for the greater part of the year, but towards Christmas these were augmented by 29 vans belonging to

travelling showmen, who were taking part in the Kelvin Hall Carnival. The majority of travelling showmen, when in the city, find a parking-place for their vans at the Gallowgate ground, but when that place is full they have to find suitable yards where there are water-closets and an adequate supply of water. The average number of persons living in vans for the year was 125. Most of the van dwellers kept their premises clean and tidy, but a few of the older inhabitants had to be warned to improve the cleanliness of their vans and bedding, which they did.

Burial Grounds.—The condition of the three principal burial grounds has been satisfactory. Frequent visits were paid to see that the bye-laws were being observed, and at no time has there been cause for complaint.

Particulars of other activities of the department, such as those relating to workshops, &c., bakehouses, homeworkers, inspection of school children for vermin, piggeries, and the cleansing of closes and stairs, which call for no particular comment, are detailed in Appendix Table XXIII.

SANITARY CONVENIENCES USED IN COMMON BY TENANTS OF DWELLING-HOUSES.

Nature of Convenience.	Number of Tenants served.					Total.
	1	2	3	4	5 or more.	
Water-closets, ...	—	1,269	6,220	1,795	335	9,619
Sinks and water supplies outwith dwelling-houses, ...	116	70	11	—	—	197
Dry closets, ...	3	2	—	—	—	5
Privy middens, ...	—	—	—	—	—	—
Ashpits, ...	—	—	3	1	172	176

A. STIRLING,
Divisional Sanitary Inspector.

18th March, 1933.

SOUTH-EASTERN DIVISION.

Population and Housing.—An analysis of the recent Census figures shows that since the previous Census there has been a decrease of 7,184 in the population of Hutchesontown and Gorbals Wards and an increase of 17,406 in the other five wards—Campmill, Pollokshaws, Govanhill, Langside, and Cathcart—of this Division, a net increase for the Division of 10,222, the total population now being 202,475. This movement of population is in the right direction, as it is in the two first-named wards that

the greatest density exists. It is to be noted too that Hutchesontown Ward contains the highest percentage (90·4) of small houses, i.e., houses of one and two apartments. Indeed, this high figure is only exceeded by one other ward in the whole city, and then only on the percentage basis, as in Hutchesontown there are 8,606 of these houses as compared with 7,859 in the other Ward referred to. In these small houses live 87·2 per cent. of the private house population of the ward, and 63·8 per cent. are living more than two persons per room. In Gorbals Ward there are 6,654 of these small houses, or 65 per cent. of the total. In these 57·9 per cent. of the private house population find accommodation, and 52·5 per cent. are living more than two persons per room.

It is in Gorbals Ward that the majority of the uninhabitable houses in this Division are situated, but action for their closing or demolition is of necessity slow because of the lack of rehousing accommodation in the Ward, there being no suitable vacant ground, while the sites to be cleared will also be unsuitable for rehousing purposes. Two derelict properties at 89 and 91 Commercial Road, containing 44 houses, had to be represented in terms of Section 16 of the Housing (Scotland) Act, 1930, and on these Demolition Orders were made. Fifteen of the houses had been closed by the end of the year, and when accommodation has been found for the remaining 29 tenants demolition of the properties will proceed.

The building of a rehousing scheme at Carnwadric enabled the Department to represent 172 uninhabitable houses in Pollokshaws Ward. Demolition Orders were made on 165 of these houses, and the owners of the other seven gave undertakings not to use them for human habitation. Of the houses on which Demolition Orders were made, 88 have now been demolished; 74 have been closed; and three are still occupied. Of the seven houses on which undertakings not to use for human habitation were accepted, six have been closed and one is still occupied. Twenty-four houses on which Demolition Orders were made last year were still occupied at the beginning of this year. Only one of these is now occupied, nine having been demolished and 14 having been closed. The latter cannot be demolished owing to their situation. In addition, other six houses closed during 1931 were demolished this year.

New Houses.—Of Corporation schemes, 60 “Intermediate” houses, consisting of 42 three-apartment houses and 18 four-apartment houses, at Polmadie, and 428 houses—362 of three apartments and 66 of four apartments, also of the “Intermediate” type—at Carnwadric, were occupied for the first time during the year. The Carnwadric Rehousing Scheme of 144

houses—36 of two apartments and 108 of three apartments—was also completed and occupied. In addition, 931 houses—874 of four apartments and 57 of five or more apartments—were provided by private enterprise.

Rent Restrictions Acts.—Forty-one applications for certificates under these Acts were received from tenants, and four applications for reports were made by owners, all of which were granted.

Rehousing Schemes.—The new scheme of 144 houses at Carnwadric now brings the number of such schemes in this Division up to four. The tenants have not yet been long enough in occupation to permit of a fair estimate of the interest they are likely to take in their new abodes. Two tenants apparently found the new conditions not entirely to their liking, as they removed after a very short stay. At the end of the year, 142 of the tenants then in occupation were found to be keeping their houses clean and in a satisfactory condition, but the remaining two could only be classified as “fair.” There has again been some improvement in the conditions at the Polmadie Scheme, there being now 112 clean houses and 19 in the “fair” category, as against 109 and 23 respectively last year. Nine tenants removed out of the scheme, three of whom were ejected for non-payment of rent. Eight new tenants came into the scheme, thus leaving one house unoccupied at the end of the year. At the M’Neil Street Scheme also one house was untenanted at the end of the year, there having been eight removals, including five ejectments for non-payment of rent, while only seven new tenants entered into occupation. The final classification here is 177 “clean” and two “fair” tenants, as compared with 176 “clean” and four “fair” tenants in the previous year. An improvement is also shown at the Govanhill Scheme, where eight tenants improved, as against five who lapsed. Nine tenants removed, two of whom were ejected for non-payment of rent, and these were replaced by nine new tenants—all “clean.” The classification now is 279 “clean,” eight “fair,” and one “dirty.”

Bug Infestation.—A considerable amount of time was spent in an endeavour to prevent bug infestation of houses in rehousing schemes. The homes of all families to be rehoused were carefully examined some days before removal, and on the slightest indication of the presence of bugs cleansing of all furniture, &c., was insisted upon. On the day immediately preceding removal each house was sprayed and fumed, the house being temporarily vacated, and all chimneys, doors, and windows being sealed up as efficiently as possible. On the day of removal

all bedding was dispatched for further treatment to the steam disinfecting station, and from there was delivered direct to the new house.

Nuisances.—It is satisfactory to be able to record that something has at last been accomplished to improve the conditions under which hen killing and plucking for the Jewish community has hitherto been carried on. The work has always been done by each poulterer in his own premises, and usually in the basement of his shop, where lighting and ventilation were woefully deficient and proper cleansing could not be carried out. It was, of course, apparent that central premises properly constructed and fitted out was the ideal to be aimed at. Negotiations with this end in view were begun, but it soon became evident that the poulterers themselves did not look with favour upon the proposals, and that they preferred to have separate premises. In these circumstances, it was obvious that the hasty condemnation of the existing premises would result in the establishment of numerous other premises which, for financial reasons, could not be properly fitted out on modern lines, and there would in fact be little, if any, improvement on existing conditions. Endeavours were made to accomplish something more satisfactory through the Jewish Butchers' and Poulterers' Association, but, after various unsuccessful attempts, the Association withdrew from the proceedings. It was then decided to endeavour to enlist the interest of some of the prominent members of the Jewish community outwith the trade, and the successful issue now accomplished has been in great measure due to their efforts. They not only enquired about and inspected likely sites, but they also undertook journeys to London and other centres where premises of the kind already established could be inspected. In addition, they arranged the whole matter on a proper financial basis. The result was the acquiring of premises in Dunmore Lane, which have been reconstructed and fitted up on modern lines with blood drainers, plucking tables, and feather retainers, separate coops for each poulterers' live stock, and adequate sanitary accommodation.

Further complaints were received regarding the condition of Mallsmire Burn, with particular reference to the pollution caused by the discharge of sewage from the Calder Street and Jessie Street private sewers, the obstruction in the railway culvert near this point, and the overflow of sewage from the common sewer in Aitkenhead Road near Curtis Avenue. The Railway Company, the owners of the ground, and the City Engineer were all communicated with, and, as a result, the culvert was cleared and the filters at the Calder Street and Jessie Street sewers were renewed. Arrangements were also made to

have the burn piped in for a distance of about seventy yards from the Aitkenhead Road sewer overflow. The other nuisances dealt with, although of a varied nature, do not call for special comment, but details will be found in the Appendix.

Drainage. — Consultations with architects and builders regarding the drainage systems of new buildings and the inspection and testing of the work as it proceeded again occupied much time. The smoke test was applied on 2,124 occasions in connection with this work, and, in addition, 274 tests and retests were applied to old properties, the drainage systems of which were defective. In all, 7,413 visits of inspection were made.

Water-closets, Sinks, and Baths.—There has again been a reduction in the number of water-closets used in common by two or more tenants, there being now only 5,786, and of these 1,032 serve two tenants, 3,143 serve three tenants, 1,269 serve four tenants, and 342 serve five or more tenants. The houses without inside sink accommodation have also been reduced to 80 of one apartment and 75 of two apartments, as compared with 119 and 78 respectively last year. There are now approximately 24,260 houses provided with baths.

Water-closets for Shops.—Inadequate water-closet accommodation having been found to exist for the employees of 30 shops, additional accommodation was provided.

The usual routine inspection of workshops, bakehouses, home-workers, ticketed houses, common lodging-houses, tents, vans, &c., was carried out, but there is nothing in connection therewith calling for special comment.

DUNCAN THOMSON,
Divisional Sanitary Inspector.

11th April, 1933.

SOUTH-WESTERN DIVISION.

Conditions were normal, and the steady progress of former years was again maintained. Nuisances show an increase, but none of them calls for comment; drainage is satisfactory, but the bye-laws need revision; all tenement property is provided with water-closet accommodation; houses without an inside water supply and sink are further reduced to four; sanitary conveniences used in common are slightly decreased, and ashpits show practically no change. Three farm cottages were modernised under the Housing (Rural Workers) Acts, 1926 and

1931. These are the first houses in the city to be dealt with under these Acts, and the high standard attained will be taken as a precedent in any future application for a subsidy for any of the very few remaining and rapidly-diminishing agricultural workers' houses. The possibilities which certain large unlet tenement houses possessed as likely subjects for unrestricted sub-letting were exploited and threatened to revive house-farming, but this was checked and at the end of the year the matter was well in hand.

Details of the routine work will be found in the Appendix.

Nuisances.—Visits of inspection totalled 171,237, and the numbers of nuisances reported and removed were 17,872 and 17,807 respectively, as compared with 168,975 inspections, and the discovery of 17,450 nuisances and the abatement of 16,350 complaints in the preceding year. An improvement was effected in the late autumn by the introduction of mechanical dust-arrestors at a part of the public utility works noted in the three previous annual reports as contributing unduly to atmospheric pollution. Further experiments are proceeding with a view to ensuring a greater measure of efficiency; at the end of the year the premises were still under observation.

Drainage.—Drainage is satisfactory. Modification of the drainage bye-laws with regard to the trapping of waste drains for most of the new houses for which plans are passed is permitted by the Dean of Guild Court after the precedent of the Department of Health for Scotland. This relaxation represents modern sanitary practice, and may well be extended to all houses. In last year's report the abolition of the sewage pumping station at Mossbank was recorded, and, during the present year, the sewage purification works at Corkerhill were abandoned and demolished. Both installations gave rise to offensive smells in the close, warm weather of autumn. The sewage now flows directly into the new intercepting sewer, which has its outlet at the Sewage Purification Works, Shieldhall. This new intercepting sewer, in addition to providing drainage for existing premises in Cardonald, Crookston, and Hillington, made practicable two schemes for the erection by private enterprise of 2,600 houses for letting, a start to which had been made at the end of the year.

Concurrently with the making of this intercepting sewer, it was found that a common sewer was being laid on the farther side of the city boundary to drain a large private housing scheme, and that no provision had been made for the treatment of the sewage before its discharge into the River Cart. As the

result of negotiations which subsequently took place between the County and City representatives, a screening chamber and septic tank were provided on the common sewer close to its outlet.

Sanitary Conveniences, &c., used in common.—Water-closets used in common show a decrease of 9 as compared with the previous year; the numbers serving 2, 3, 4, and 5 or more tenants are 1,083, 1,888, 1,119, and 350 respectively, a total of 4,440. The number of dry-closets used in common is six, while common privy-middens are reduced to two. Ashpits used in common and serving 2, 3, 4, and 5 or more tenants number 10, 1, 10, and 1,453, a total of 1,474, a decrease of 3 as compared with the previous year. The number of houses without an inside water supply and sink is 4, a decrease of 5 on the previous year. One privy-midden was converted into two dry-closets, each serving one tenant; and 3 privy-middens and 4 dry-closets were converted into 7 water-closets, each serving one tenant.

Schools, Factories, and Workshops.—The schools were specially inspected with regard to, among other matters, the sanitary accommodation, which, on the whole, was satisfactory. The customary routine inspection of workshops and of such factories as are usually visited was carried out. There is nothing outstanding to report.

Rat Destruction.—Nothing falls to be recorded regarding rat extermination, which is now a matter of daily routine, other than that "Rat Week" makes for increased interest and concerted action.

New Houses.—Under private enterprise, 23 bungalows and semi-detached houses were erected in Cardonald, Crookston, and Pollokshields districts, against 31 in 1931, and 2 one-apartment houses, formerly a shop, plans for the conversion of which into two separate dwelling-houses were passed by the Dean of Guild Court, were occupied during the year; the Corporation erected 620 houses in all, viz.—174 houses of three and four apartments each in Torbreck Street Housing Scheme, as against a similar number there last year; and 446 houses (380 of three apartments and 66 of four apartments each) at West Drumoyne Intermediate Housing Scheme, which was commenced during the year.

Sub-division and reconditioning of large unlet tenement houses.—Several consultations took place with owners' representatives regarding the sanitary requirements in houses where making-down and modernising was contemplated, but, generally, either the financial or structural difficulties were such as to

rule out the proposals, as in one case only did the project mature, the work on which was proceeding at the end of the year. In nine instances bedrooms were converted into light bathrooms with modern amenities.

Housing (Rural Workers) Acts, 1926-1931.—Three houses were reconditioned and substantial improvements were effected, including the provision of water-closets, baths, sculleries, sinks, and hot-water installations, as well as other alterations and improvements.

Repair of Houses.—Under Section 14 of the Housing Act, 1930, 15 notices were served with respect to 49 houses which were in disrepair. The requisite repairs were duly carried out by the owners. In addition, intimations given under Section 19 of the Public Health Act, 1897, regarding dampness or disrepair in 2,685 houses, were complied with.

Slum Clearance—Closing and Demolition of Houses.—The number of houses closed by reason of Demolition Orders made under the Housing Act, 1930, was 29, and 3 of these and 11 others closed last year were demolished. The remaining 26 houses await early demolition. Two houses which became vacant, and which were uninhabitable and could not be re-let legally, were closed permanently without recourse to legal action. Five houses were closed and demolished on a site to be used as a housing scheme, and 13 were closed and demolished by the owners, who propose using the site for industrial purposes.

Rehousing—Whitefield Road Rehousing Scheme.—Visitation at frequent intervals continued at the 114 houses in this scheme, and the records show 113 as being clean and one fair, which is the same as in the previous year.

Rent (Restrictions) Acts.—Seven applications for certificates were made, and 6 were granted and one refused, as against 34 last year, all of which were granted.

Farmed-out Houses.—There are 12 farmed-out houses on the register, the same as in last year; the bye-laws with regard to these houses continue to be strictly enforced. Comparatively few changes occurred in the sub-tenancies during the year. Since Whitsunday last there has been evidence of a movement to revive the practice of farming-out of houses. Unlet houses in tenements in localities which have ceased to be attractive presented an opportunity to revive farming-out, and several

houses were sub-let to separate families at rents of from 6s. to 10s. a week, without regard to the sanitary accommodation which should be available for a number of separate families. During the year six such cases became known to the department, and, as the result of action which followed, three of the principal tenants (none of whom was resident in the sub-let houses) were ejected for breach of their missives of let. In the other three cases the factors, though promising attention and requesting postponement of action, have failed to do anything, and, at the end of the year, the procedure for having the houses legally declared farmed-out houses was set in motion.

Overcrowding.—Comparison of the records for the past six years points to a gradual continuing decline in the volume of overcrowding, but gross overcrowding persists, though to a lesser extent than formerly.

Standards of Occupancy.—Until quite recently airspace was the criterion for judging overcrowding, i.e., 400 cubic feet for an adult (ten years of age or over) and 200 cubic feet for a child (under ten years).

The Department of Health for Scotland, in the draft model bye-laws of December, 1930, for "improvement areas," recommended that a room used as a sleeping apartment should not be so used by a greater number of persons than two, provided (a) that each person in such room should have at least 40 square feet of floor space; and (b) that persons of different sex above the age of *ten* years should not occupy the same sleeping apartment, except in the case of husband and wife. For similar purposes in England, the standard recommended is 40 square feet of floor space for each person of school age or more, and 30 feet of floor space for each person of less than school age, and also that the sleeping accommodation be sufficient to allow of the separation of persons of opposite sexes over *fourteen* years of age, other than persons living together as man and wife. Here, the penalty clause contains the following very important reservation, viz.:—"Provided further that a person shall not be convicted of an offence under Bye-law 3 (overcrowding) or Bye-law 4 (non-separation of young persons of opposite sexes) if the Court is satisfied that, having regard to the size of his family, he has not sufficient accommodation to comply with either of these bye-laws, and that he has been unable to obtain sufficient accommodation, either because accommodation is not available or because of poverty." The standard of accommodation of the Department of Health for Scotland for houses in rehousing schemes is as follows:—A house of two apartments will be normally regarded as rendering accommodation for three persons, a house of three apartments for five persons, a house of four apartments for seven persons, and so on.

One-apartment Houses.—The minimum cubic content of the one-apartment house is regulated by the Glasgow Police Act, 1866, which stipulates 700 cubic feet for houses in use before the date of the passing of that Act, and 900 cubic feet for houses erected thereafter. (Under the Burgh Police (Scotland) Act, 1903, the minimum for new one-apartment houses is 1,000 cubic feet, and, under bye-laws made in 1932 by a neighbouring local authority under the Housing (Scotland) Act, 1925 (which enjoins a standard based on cubic space), the minimum for a one-apartment house sanctioned in exceptional circumstances is 1,600 cubic feet, exclusive of the bathroom and other modern amenities which it must possess.) The *erection* of further one-apartment houses is controlled by the Housing, Town Planning, &c. (Scotland), Act, 1919, under which dwelling-houses with less accommodation than three apartments are not to be erected without consent of the Local Authority. Neither this Act nor the Housing (Scotland) Act, 1925, prohibits the *conversion* of existing premises, say a shop, into a one-apartment house, though no doubt such was the intention of both Acts. The cubic capacity of the one-apartment house may be taken as ranging from 700 to 2,200 cubic feet, with an average of 1,300 cubic feet, which, on the standard of 400 and 200 cubic feet for an adult and child respectively, is the airspace required for three adults, or for two adults and two children, or for one adult and four children, so that the average one-apartment house may be legally occupied by five persons.

The One-apartment House.—There are in the Division, according to the 1931 census, 4,695 one-apartment houses, with an average occupancy of 3·1 persons per house. An enquiry was made into certain features of occupancy of a sample group of 615 of these houses in March, 1931, and again in December, 1932. They were selected from the five wards of the Division as being fairly representative of their kind. The intention of these surveys was to ascertain the manner in which these small houses are occupied and the changes in occupancy which take place in them. The average number of occupants was 3·64 persons per house, somewhat in excess of the census figure. The results are set out in two appended tables (A and B), which show in Table A the numbers occupying these houses and the movements which took place between the two surveys, and in Table B the source from which the new families came. These data furnish certain important facts.

Houses with one inmate were occupied by 56 persons living alone (20 men and 36 women), all but 21 being over 65 years of age. This number is 9 per cent. of the total one-roomed houses, and it was found that, although a considerable number

of removals (by death and otherwise) took place between the two surveys, the number so occupied remained much the same, being 60 in 1932, as compared with 56 in 1931. This proportion, 9 per cent., of one-apartment houses occupied by single persons would appear to be fairly constant. *Houses with two inmates* were 142 in the first survey and 161 in the second, forming at the latter date 23 per cent. of the total houses. Of these, there were 92 married couples without children, 35 (38 per cent.) being between 18 and 30 years of age and 19 (20 per cent.) over 65 years of age. *Houses with three inmates* numbered 137 and 152 respectively, or 22 per cent. of the total houses; in 79 houses (one-half of the total) the inmates consisted of parents and one child under five years, 20 of whom had occupied these houses on marriage and 28 had come from lodgings. *Houses with four persons* (17 per cent. of the total) showed a slight increase, but those with six, seven, and eight inmates declined in number between the two surveys, several of the original tenants going to larger houses as shown in the table.

Single-apartment houses with still larger families were noted, as follows:—Ten houses with 9 inmates, one with 10 inmates, and two with 11 inmates were found at the first survey. In the later survey there were six with 9 inmates, four with 10 inmates, two with 11 inmates, and one with 12 inmates. These facts illustrate the problem of the very large family in a single-apartment house. While one or two had removed to larger houses, several of them had occupied the same house for periods ranging from 14 to 20 years.

The information shows that a very considerable ebb-and-flow of population takes place in these small houses. For instance, out of the total 615 houses there had been 238 removals (38 per cent.)—a considerable proportion. Of these, 55 families went to other one-room houses, but 138 went to houses of two or more apartments. Tables A and B illustrate these points.

On comparing these tables, it will be found that, within the period of one year and nine months, that is, at the date of the second survey, in the aggregate 5 more families resided in houses of one apartment; that 62 families came from houses of two or more apartments (the usual reason for the change is said to be inability to pay the rent of the larger house), and 138 went to larger houses and so had definitely improved their housing accommodation; that 15 were found to have gone into lodgings and 78 were able to leave lodgings for houses of their own; that 15 of the old tenants died; and that 35 families (20 on, and 15 immediately after, marriage—the latter after a short spell in lodgings) took up house for the first time.

Occupations of Tenants and their state as to Employment.—Of the 615 tenants, 47 are either old age or other pensioners and 67 are widows or spinsters, a total of 114 (18 per cent.), leaving 501 male householders, potentially employable, of whom 286 (57 per cent.) are classified as labourers. The occupations of the other male tenants are very varied. Fully 64 per cent. of the labourers and 56 per cent. of the others are unemployed.

Rent and Rates.—The rents range from £6 to £12 a year, which, expressed in rent and rates, is equivalent to from 3s. 0 $\frac{3}{4}$ d. to 6s. 3 $\frac{3}{4}$ d. a week, and the varying weekly charges are levied in the following proportions, viz.:—3s. 0 $\frac{3}{4}$ d. to 3s. 5 $\frac{1}{4}$ d., 3 per cent.; 3s. 6 $\frac{3}{4}$ d. to 3s. 11 $\frac{1}{4}$ d., 6 per cent.; 4s. 1d. to 4s. 5 $\frac{1}{2}$ d., 23 per cent.; 4s. 7d. to 4s. 11 $\frac{1}{4}$ d., 48 per cent.; 5s. 1 $\frac{1}{4}$ d. to 6s. 8d., 14 per cent.; 5s. 9 $\frac{1}{2}$ d. to 6s. 2 $\frac{1}{4}$ d., 3 per cent.; and 6s. 3 $\frac{3}{4}$ d., 3 per cent. Almost one-fourth of the rents are from £8 to £8 15s. a year (weekly rent and rates, 4s. 1d. to 4s. 5 $\frac{1}{2}$ d.); one-half from £9 to £9 15s. (weekly rent and rates, 4s. 7d. to 4s. 11 $\frac{1}{4}$ d.); and one-seventh are from £10 to £10 15s. (weekly rent and rates, 5s. 1 $\frac{1}{4}$ d. to 5s. 8d.).

TABLE A.

TABLE SHOWING THE NUMBER OF FAMILIES AT THE FIRST SURVEY AND THE NUMBER OF FAMILIES WHICH REMOVED IN THE INTERVAL BETWEEN THE SURVEYS, CLASSIFIED ACCORDING TO THE NUMBER OF INMATES IN EACH, TOGETHER WITH THE SIZE OF THE HOUSE TO WHICH EACH REMOVED.

No. of Inmates in each House.	Total Houses as at March, 1931.	Removed to								Deaths.	Total Re- movals.	Per- centage of Re- movals.
		Houses of				Outwith						
		1 Apt.	2 Apts.	3 Apts.	4 Apts.	Lodgings.	City.	Not Traced.				
1, ...	56	3	2	—	—	2	1	—	13	21	37	
2, ...	142	16	22	—	—	3	1	1	2	45	31	
3, ...	137	16	29	1	—	5	1	2	—	54	39	
4, ...	107	13	23	2	1	1	2	4	—	46	43	
5, ...	82	4	22	1	—	3	2	1	—	33	40	
6 ...	43	1	16	1	1	—	—	—	—	19	44	
7, ...	18	2	7	—	—	—	—	—	—	9	50	
8, ...	19	—	7	1	—	—	—	—	—	8	42	
9, ...	10	—	2	—	—	1	—	—	—	3	30	
10, ...	1	—	—	—	—	—	—	—	—	—	—	
11, ...	2	—	—	—	—	—	—	—	—	—	—	
12, ...	—	—	—	—	—	—	—	—	—	—	—	
Total,	617*	55	130	6	2	15	7	8	15	238*	38	

* Includes 2 latterly converted into (a) shop, and (b) club.

TABLE B.

TABLE SHOWING THE NUMBER OF FAMILIES AT THE SECOND SURVEY AND THE NEW FAMILIES RECORDED IN THE INTERVAL BETWEEN THE SURVEYS, CLASSIFIED ACCORDING TO THE NUMBER OF INMATES IN EACH, TOGETHER WITH THE SIZE OF HOUSE FROM WHICH EACH CAME.

No. of Inmates. in each House.	Total Houses as at December, 1932.	Came from					First House (after marriage).	Total new Families.	Percent- age of new Families.
		Houses of			Lodgings.	Outwith City.			
		1 Apt.	2 Apts.	3 Apts.					
1, ...	60	6	6	—	8	—	—	20	33
2, ...	151	16	13	—	14	—	20	63	41
3, ...	152	17	13	2	33	—	15	80	52
4. ...	117	9	19	—	13	1	—	42	35
5, ...	57	6	5	—	5	—	—	16	28
6, ...	38	4	3	—	4	—	—	11	29
7, ...	17	1	—	1	—	—	—	2	11
8, ...	10	—	1	—	—	—	—	1	10
9, ...	6	—	—	—	—	—	—	—	—
10, ...	4	1	—	—	—	—	—	1	25
11, ...	2	—	—	—	—	—	—	—	—
12, ...	1	—	—	—	—	—	—	—	—
Total,	615	60	60	3	77	1	35	236	38

JAMES REID,
Divisional Sanitary Inspector.

16th March, 1933.

APPENDIX.

TABLE I.—GLASGOW, 1932.—ESTIMATED POPULATION IN EACH MUNICIPAL WARD, ACREAGE, AND PERSONS PER ACRE.

MUNICIPAL WARDS.	POPULATION.				Acreage.	Persons per acre (including Institutions and Shipping).
	Without Institutions and Shipping.	Institutions.	Shipping.	Total.		
1. Shettleston and Tollcross, ...	41,044	146	—	41,190	1,061	39
2. Parkhead, ...	37,761	1,363	—	39,124	883	44
3. Dalmarnock, ...	35,705	34	—	35,739	288	124
4. Calton, ...	27,839	2,096	—	29,935	333	90
5. Mile-end, ...	21,166	38	—	21,204	191	111
6. Whitevale, ...	21,871	257	—	22,128	176	126
7. Dennistoun, ...	26,346	333	—	26,679	280	95
8. Provan, ...	41,784	874	—	42,658	1,293	33
9. Cowlairs, ...	21,059	1,693	—	22,752	456	50
10. Springburn, ...	22,718	3,082	—	25,800	2,748	9
11. Townhead, ...	25,451	1,660	—	27,111	175	155
12. Exchange, ...	14,085	2,383	7	16,475	289	57
13. Blythswood, ...	10,792	2,418	11	13,221	242	55
14. Anderston, ...	24,973	1,007	806	26,786	422	63
15. Sandyford, ...	19,287	490	—	19,777	152	130
16. Park, ...	19,456	199	—	19,655	272	72
17. Cowcaddens, ...	34,756	689	1	35,446	488	73
18. Woodside, ...	31,959	957	—	32,916	170	194
19. Ruchill, ...	40,731	1,268	2	42,001	1,766	24
20. North Kelvin, ...	21,022	56	—	21,078	146	144
21. Maryhill, ...	25,319	865	4	26,188	1,391	19
22. Kelvinside, ...	23,918	1,176	—	25,094	1,127	22
23. Partick (East), ...	27,347	1,150	—	28,497	268	106
24. „ (West), ...	23,753	61	123	23,937	357	67
25. Whiteinch, ...	57,321	970	13	58,304	2,696	22
26. Hutchesontown, ...	38,576	5	—	38,581	389	99
27. Gorbals, ...	45,146	714	—	45,860	252	182
28. Kingston, ...	29,591	227	163	29,981	285	105
29. Kinning Park, ...	34,757	468	245	35,470	379	94
30. Govan, ...	35,461	415	—	35,876	529	68
31. Fairfield, ...	29,937	1,782	104	31,823	1,402	23
32. Pollokshields, ...	28,503	1,812	—	30,315	4,678	6
33. Camphill, ...	19,207	82	—	19,289	366	53
34. Pollokshaws, ...	23,111	—	—	23,111	1,847	13
35. Govanhill, ...	32,330	246	—	32,576	365	89
36. Langside, ...	17,347	850	—	18,197	557	33
37. Cathcart, ...	30,438	51	—	30,489	1,327	23
CITY, ...	1,061,867	31,917	1,479	1,095,263	30,046	36

TABLE II.—GLASGOW, 1932.—INHABITED AND UNOCCUPIED HOUSES
IN EACH MUNICIPAL WARD.

MUNICIPAL WARDS.	INHABITED HOUSES.*				Empty Hous.
	1932.	1931.	Decrease.	Increase.	
1. Shettleston and Tollcross,	9,591	9,482	—	109	
2. Parkhead, ...	8,956	8,851	—	105	
3. Dalmarnock, ...	8,604	8,605	1	—	
4. Calton, ...	6,723	7,507	784	—	
5. Mile-end, ...	5,161	5,164	3	—	
6. Whitevale, ...	5,375	5,397	22	—	
7. Dennistoun, ...	6,920	6,649	—	271	
8. Provan, ...	10,153	9,965	—	188	
9. Cowlairs, ...	5,624	5,620	—	4	
10. Springburn, ...	5,314	5,319	5	—	
11. Townhead, ...	6,199	6,169	—	30	1
12. Exchange, ...	3,553	3,575	22	—	
13. Blythswood, ...	2,498	2,578	80	—	
14. Anderston, ...	5,995	6,007	12	—	
15. Sandyford, ...	4,574	4,647	73	—	1
16. Park, ...	4,937	4,984	47	—	2
17. Cowcaddens, ...	8,420	8,415	—	5	
18. Woodside, ...	8,159	8,183	24	—	
19. Ruchill, ...	9,315	9,056	—	259	
20. North Kelvin, ...	5,670	5,658	—	12	
21. Maryhill, ...	6,208	5,941	—	267	
22. Kelvinside, ...	6,212	6,230	18	—	1
23. Partick (East), ...	6,784	6,840	56	—	
24. „ (West), ...	6,487	6,490	3	—	
25. Whiteinch, ...	14,718	14,364	—	354	
26. Hutchesontown, ...	9,627	9,613	—	14	
27. Gorbals, ...	10,237	10,331	94	—	1
28. Kingston, ...	6,721	6,747	26	—	
29. Kinning Park, ...	8,423	8,339	—	84	
30. Govan, ...	7,962	7,984	22	—	
31. Fairfield, ...	7,336	7,345	9	—	
32. Pollokshields, ...	7,530	7,288	—	242	1
33. Camphill, ...	5,701	5,705	4	—	
34. Pollokshaws, ...	6,003	5,603	—	400	
35. Govanhill, ...	8,341	8,286	—	55	
36. Langside, ...	4,818	4,832	14	—	
37. Cathcart, ...	8,472	7,410	—	1,062	
CITY, ...	263,321	261,179	—	2,142	2,2

* Includes Inhabitant Occupiers.

TABLE III.—GLASGOW.—LININGS GRANTED BY DEAN OF GUILD COURT
IN YEARS FROM 1919 TO 1932, IN RESPECT OF HOUSES.

Year ending 1st August.	NUMBER OF APARTMENTS.						TOTAL.
	1.	2.	3.	4.	5.	6.	
19, ...	—	—	144	78	—	—	222
20, ...	—	12	1,239	414	214	57	1,936
21, ...	—	—	1,176	981	240	34	2,431
22, ...	—	—	65	99	39	31	234
23, ...	—	680	286	205	104	46	1,321
24, ...	—	357	991	605	745	82	2,780
25, ...	—	504	674	111	44	61	1,394
26, ...	—	318	4,649	967	769	93	6,796
27, ...	—	228	2,889	1,209	802	55	5,183
28, ...	—	132	4,184	2,238	314	17	6,885
29, ...	—	570	1,656	1,024	124	82	3,456
30, ...	—	506	1,958	1,295	230	202	4,191
31, ...	—	122	2,220	1,900	38	26	4,306
32, ...	33	529	3,464	1,251	70	4	5,351

TABLE IV.—ABSTRACT OF METEOROLOGICAL OBSERVATIONS TAKEN AT
SPRINGBURN PUBLIC PARK.

MONTHS.	TEMPERATURE.			RAINFALL.		SUNSHINE.
	Highest Temperature in Shade.	Lowest Temperature in Shade.	Mean Temperature.	No. of Days.	Amount Collected in inches.	Hours.
1932.						
January, ...	54	26	42.0	24	7.07	32.0
February, ...	55	25	39.6	4	0.07	68.9
March, ...	56	25	40.7	14	2.20	70.2
April, ...	59	29	42.4	22	3.64	148.5
May, ...	66	30	49.0	18	3.19	149.1
June, ...	83	40	57.2	9	1.07	209.6
July, ...	75	45	58.5	26	3.29	111.3
August, ...	74	39	58.5	18	1.96	99.9
September, ...	71	32	52.4	20	3.91	102.2
October, ...	60	28	45.1	27	6.19	80.8
November, ...	55	27	40.8	18	3.28	34.3
December, ...	55	26	41.1	23	7.11	19.3
1923, ...	83	20	46.4	260	44.64	1,036
1924, ...	74	18	46.1	256	39.72	973
1925, ...	83	18	46.7	222	38.24	1,224
1926, ...	86	22	47.7	242	45.91	1,174
1927, ...	77	20	46.8	245	49.12	1,162
1928, ...	79	20	46.8	255	49.35	1,121
1929, ...	80	14	46.3	226	43.01	1,223
1930, ...	79	20	47.7	234	42.94	1,022
1931, ...	73	19	46.5	251	43.06	1,078
1932, ...	83	25	47.3	223	42.98	1,126

The records for years previous to 1921 were taken at Glasgow Observatory.

TABLE V.—GLASGOW.—BIRTHS AND BIRTH-RATES *per Million* IN EACH WARD FOR THE YEAR 1932, AND NUMBER AND PERCENTAGE OF ILLEGITIMATE BIRTHS.

MUNICIPAL WARDS.	Births. 1932.	Birth-rate. 1932.	Birth-rate. 1931.	Illegitimate Births	
				No.	% Tot. Births
1. Shettleston and Tollcross, ...	972	23,682	24,317	60	6.2
2. Parkhead, ...	858	22,722	25,059	36	4.2
3. Dalmarnock, ...	998	27,951	27,848	26	2.6
4. Calton, ...	736	26,438	26,918	40	5.4
5. Mile-End, ...	621	29,339	30,337	33	5.3
6. Whitevale, ...	546	24,965	23,890	29	5.3
7. Dennistoun, ...	433	16,435	17,000	23	5.3
8. Provan, ...	1,055	25,249	25,245	40	3.8
9. Cowlairst, ...	460	21,843	21,451	21	4.6
10. Springburn, ...	508	22,361 ² ₃	21,852	21	4.1
11. Townhead, ...	604	23,732	22,625	60	9.9
12. Exchange, ...	376	26,695	25,647	59	15.7
13. Blythswood, ...	209	19,366	17,749	21	10.0
14. Anderston, ...	649	25,988	23,410	49	7.4
15. Sandyford, ...	394	20,428	20,463	31	7.4
16. Park, ...	173	8,892	9,658	25	14.4
17. Cowcaddens, ...	1,008	29,002	28,528	80	7.4
18. Woodside, ...	786	24,594	24,862	44	5.4
19. Ruchill, ...	904	22,194	21,758	52	5.4
20. North Kelvin, ...	436	20,740	20,640	27	6.4
21. Maryhill, ...	572	22,592	23,110	24	4.4
22. Kelvinside, ...	168	7,023	6,528	6	3.4
23. Partick (East), ...	483	17,662	19,026	30	6.4
24. „ (West), ...	487	20,503	18,911	16	3.4
25. Whiteinch, ...	990	17,271	19,657	29	2.4
26. Hutchesontown, ...	1,049	27,193	29,261	56	5.4
27. Gorbals, ...	1,200	26,580	25,517	100	8.4
28. Kingston, ...	805	27,204	25,841	62	7.4
29. Kinning Park, ...	865	24,887	23,765	51	5.4
30. Govan, ...	866	24,421	24,594	32	3.4
31. Fairfield, ...	549	18,339	19,781	30	5.4
32. Pollokshields, ...	248	8,701	9,696	9	3.4
33. Camphill, ...	202	10,517	10,511	2	1.4
34. Pollokshaws, ...	397	17,178	14,690	21	5.4
35. Govanhill, ...	526	16,270	17,230	25	4.4
36. Langside, ...	148	8,532	9,550	7	4.4
37. Cathcart, ...	345	11,335	13,246	7	2.4
Institutions, &c., ...	106	—	—	46	—
CITY, ...	22,732	20,765	21,063	1,330	5

TABLE VI.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* IN EACH MUNICIPAL WARD, FOR THE YEAR 1932, AND CORRESPONDING RATES FOR 1931 AND 1930.

MUNICIPAL WARDS.	Deaths. 1932.	Death-rates.		
		1932.	1931.	1930.
1. Shettleston and Tollcross, ...	580	14,131	12,800	12,325
2. Parkhead, ...	484	12,817	11,715	13,117
3. Dalmarnock, ...	572	16,020	16,592	14,894
4. Calton, ...	508	18,248	17,966	19,264
5. Mile-End, ...	385	18,189	16,267	16,827
6. Whitevale, ...	370	16,917	15,010	16,408
7. Dennistoun, ...	348	13,209	12,483	13,216
8. Provan, ...	556	13,307	15,025	11,892
9. Cowlairs, ...	246	11,681	14,044	11,828
10. Springburn, ...	305	13,425	11,476	11,766
1. Townhead, ...	416	16,345	16,638	15,269
2. Exchange, ...	256	18,175	19,235	18,920
3. Blythswood, ...	193	17,884	17,222	17,513
4. Anderston, ...	422	16,898	15,965	15,672
5. Sandyford, ...	330	17,110	16,006	15,795
6. Park, ...	307	15,779	15,026	14,825
7. Cowcaddens, ...	598	17,206	18,037	17,042
8. Woodside, ...	513	16,052	15,632	15,837
9. Ruchill, ...	524	12,865	12,265	12,990
10. North Kelvin, ...	298	14,176	13,156	13,383
1. Maryhill, ...	350	13,824	11,042	12,394
2. Kelvinside, ...	296	12,376	11,661	12,206
3. Partick (East), ...	403	14,737	14,577	14,848
4. „ (West), ...	310	13,051	13,769	10,769
5. Whiteinch, ...	607	10,589	10,442	10,042
6. Hutchesontown, ...	541	14,024	15,094	14,391
7. Gorbals, ...	756	16,746	17,285	17,338
8. Kingston, ...	478	16,154	14,971	16,884
9. Kinning Park, ...	521	14,990	12,838	14,717
10. Govan, ...	551	15,538	15,582	16,565
1. Fairfield, ...	353	11,791	13,111	12,205
2. Pollokshields, ...	370	12,981	10,510	12,259
3. Camphill, ...	256	13,328	12,148	13,698
4. Pollokshaws, ...	321	13,889	12,706	11,738
5. Govanhill, ...	372	11,506	11,590	11,639
6. Langside, ...	231	13,316	11,704	11,296
7. Cathcart, ...	336	11,039	9,992	9,908
8. Institutions, ...	792	—	—	—
9. Harbour, ...	16	—	—	—
* Inward Transfers, ...	—	—	—	—
CITY, ...	16,071	14,680	14,245	14,194

* Inward Transfer Deaths, where information is available, are allocated against appropriate wards.

TABLE VIII.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* FROM DIFFERENT CAUSES, FOR THE YEAR 1932, AND CORRESPONDING RATES FOR 1931 AND 1930.

CAUSE OF DEATH.	DEATHS. 1932.	ANNUAL DEATH-RATE PER MILLION.		
		1932.	1931.	1930.
1. Typhoid and Paratyphoid Fevers, ...	9	8	10	9
35A. Typhus Fever, ...	—	—	1	1
35B. Smallpox, ...	—	—	—	—
2. Measles, ...	187	171	382	244
3. Scarlet Fever, ...	102	93	68	38
4. Whooping Cough, ...	128	117	426	207
5. Diphtheria, ...	119	109	109	133
6. Influenza, ...	454	415	190	147
7. Encephalitis Lethargica, ...	19	17	18	25
8. Cerebro-spinal Fever, ...	84	77	119	85
35C. Erysipelas, ...	60	55	51	58
9. Tuberculosis of Respiratory System, ...	974	890	865	805
0A. Tuberculous Meningitis, ...	147	134	153	182
0B. Abdominal Tuberculosis, ...	50	46	55	51
0C. Other Tuberculous Diseases, ...	97	89	110	104
1. Syphilis, ...	44	40	36	*
2. General Paralysis of Insane (Tabes Dorsalis), ...	59	54	65	†
3. Cancer, Malignant Disease, ...	1,496	1,367	1,393	1,320
35D. Rheumatic Fever, ...	77	70	52	57
4. Diabetes, ...	155	142	116	125
5. Cerebral Hæmorrhage, &c., ...	1,026	937	929	917
35E. Meningitis (not Tuberculous), ...	61	56	55	55
35F. Other Nervous Diseases, ...	308	281	341	464
6. Heart Disease, ...	2,358	2,154	2,021	1,985
7. Aneurysm, ...	31	28	38	†
8A. Arterio-sclerosis, ...	456	416	370	338
8B. Other Circulatory Diseases, ...	91	83	88	82
9. Bronchitis, ...	599	547	455	576
0. Pneumonia (all forms), ...	1,917	1,751	1,408	1,628
1. Other Respiratory Diseases, ...	216	197	162	207
2. Peptic Ulcer, ...	112	102	107	99
3. Diarrhœa, &c. (under 2 years), ...	421	385	279	267
4. Appendicitis, ...	105	96	98	98
5. Cirrhosis of Liver, ...	50	46	32	33
6. Other Diseases of Liver, &c., ...	76	69	62	*
7. Other Digestive Diseases, ...	335	306	313	*
8. Acute and Chronic Nephritis, ...	403	368	321	409
9. Puerperal Sepsis, ...	83	76	65	79
0. Other Puerperal Causes, ...	96	88	72	106
1. Congenital Debility, Premature Birth, Malformations, &c., ...	834	762	840	739
2. Senility, ...	439	401	349	*
3. Suicide and Other Deaths from Violence, ...	607	554	600	663
4. Other Defined Causes, ...	797	728	686	1,627
6. Causes Ill-Defined or Unknown, ...	389	355	335	231
ALL CAUSES, ...	16,071	14,680	14,245	14,194

* Included in "Other Defined Causes." † Included in "Other Nervous Diseases." ‡ Included in "Other Circulatory Diseases."

TABLE IX.—GLASGOW, 1932.—DEATHS FROM

CAUSE OF DEATH.	MALES.														Total Males.
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+		
1. Typhoid and Paratyphoid Fevers,	—	—	1	—	—	—	—	1	—	—	—	—	—	2	
35A. Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
35B. Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
2. Measles, ...	35	42	13	1	—	—	—	—	—	1	—	—	—	92	
3. Scarlet Fever, ...	1	3	11	11	3	3	—	4	2	2	1	—	—	41	
4. Whooping Cough, ...	25	21	13	—	—	—	—	—	—	—	—	—	—	59	
5. Diphtheria, ...	7	13	20	16	4	1	1	1	2	—	1	—	—	66	
6. Influenza, ...	17	8	2	2	3	4	4	20	25	35	31	35	23	209	
7. Encephalitis Lethargica, ...	—	—	—	—	—	1	1	1	3	2	3	—	—	11	
8. Cerebro-spinal Fever, ...	23	3	6	2	1	3	—	2	1	4	—	2	—	47	
35C. Erysipelas, ...	7	1	—	—	—	—	—	—	5	8	3	3	3	30	
9. Tuberculosis of Respiratory System, ...	3	4	8	5	10	49	60	111	109	101	50	22	1	533	
10A. Tuberculous Meningitis, ...	11	15	19	15	7	8	4	2	3	—	—	—	—	84	
10B. Abdominal Tuberculosis, ...	—	2	6	2	5	3	2	3	2	1	—	—	—	26	
10C. Other Tuberculous Diseases, ...	2	—	4	5	3	6	8	6	4	6	2	2	—	48	
11. Syphilis, ...	5	—	—	—	1	—	—	2	4	5	8	7	1	33	
12. General Paralysis of Insane (Tabes Dorsalis), ...	—	—	—	—	—	1	2	2	8	13	10	8	—	44	
13. Cancer, Malignant Disease, ...	—	2	1	1	—	6	5	11	32	117	227	226	82	710	
35D. Rheumatic Fever, ...	—	—	1	1	3	1	3	4	2	5	2	3	—	25	
14. Diabetes, ...	—	—	—	—	1	—	5	3	6	8	17	11	4	55	
15. Cerebral Hæmorrhage, &c., ...	1	—	—	1	—	1	2	4	6	33	109	200	124	481	
35E. Meningitis (not Tuberculous), ...	14	2	4	—	—	1	1	1	5	1	—	—	—	29	
35F. Other Nervous Diseases, ...	33	7	7	4	7	8	8	13	15	23	20	20	7	172	
16. Heart Disease, ...	3	1	4	8	11	3	14	28	58	124	282	342	249	1,127	
17. Aneurysm, ...	—	—	—	—	—	—	—	—	1	6	12	2	—	21	
18A. Arterio Sclerosis, ...	—	—	—	—	—	—	—	—	1	15	48	104	91	259	
18B. Other Circulatory Diseases, ...	1	1	1	—	1	—	—	—	—	5	13	15	13	50	
19. Bronchitis, ...	42	2	2	—	—	2	1	6	23	32	37	72	68	287	
20. Pneumonia (all forms), ...	391	149	52	14	13	20	29	58	83	78	86	57	43	1,073	
21. Other Respiratory Diseases, ...	6	2	3	1	1	2	1	3	9	19	15	26	20	108	
22. Peptic Ulcer, ...	—	—	—	—	—	2	2	9	14	18	21	13	3	82	
23. Diarrhoea, &c. (under 2 years),	228	11	—	—	—	—	—	—	—	—	—	—	—	239	
24. Appendicitis, ...	—	—	2	6	8	6	5	6	3	6	10	7	—	59	
25. Cirrhosis of Liver, ...	—	—	—	1	—	1	—	—	1	12	12	7	1	36	
26. Other Diseases of Liver, &c., ...	1	—	—	—	—	—	—	—	—	4	7	3	4	19	
27. Other Digestive Diseases, ...	18	8	11	10	1	2	1	14	19	22	32	34	15	187	
28. Acute and Chronic Nephritis, ...	—	—	2	5	1	8	1	9	20	31	64	40	17	198	
29. Puerperal Sepsis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
30. Other Puerperal Causes, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
31. Congenital Debility, Premature Birth, Malformations, &c.,	482	5	1	—	1	1	1	—	—	—	—	—	—	491	
32. Senility, ...	—	—	—	—	—	—	—	—	—	—	3	43	117	163	
33. Suicide and other Deaths from	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
and 34. Violence, ...	8	13	20	44	19	13	16	43	37	46	70	43	22	394	
35. Other Defined Causes, ...	53	17	9	11	3	6	6	21	30	56	74	90	58	434	
36. Causes Ill-Defined or Unknown,	10	3	1	2	—	—	4	5	13	30	67	61	30	226	
ALL CAUSES, ...	1,427	335	224	168	107	162	187	393	546	869	1,337	1,498	996	8,249	

DIFFERENT CAUSES IN SEXES AND AT SEVERAL AGE-PERIODS.

CAUSE OF DEATH.	FEMALES.														Total Females	Total Both Sexes.
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+			
1. Typhoid and Paratyphoid Fevers, ...	—	—	—	—	—	—	2	1	4	—	—	—	—	7	9	
15A. Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
15B. Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
2. Measles, ...	25	49	16	4	—	—	1	—	—	—	—	—	—	95	187	
3. Scarlet Fever, ...	6	9	21	7	6	3	2	4	—	1	2	—	—	61	102	
4. Whooping-cough, ...	22	25	21	1	—	—	—	—	—	—	—	—	—	69	128	
5. Diphtheria, ...	4	5	16	24	2	1	—	—	—	—	—	—	1	53	119	
6. Influenza, ...	14	2	2	3	2	6	4	13	25	39	35	49	51	245	454	
7. Encephalitis Lethargica, ...	—	—	—	—	1	—	—	4	—	—	2	—	1	8	19	
8. Cerebro-spinal Fever, ...	15	9	2	1	3	1	4	1	—	1	—	—	—	37	84	
15C. Erysipelas, ...	9	—	—	—	—	—	—	2	—	3	6	6	4	30	60	
9. Tuberculosis of Respiratory System, ...	2	2	10	5	20	81	80	122	53	39	24	3	—	441	974	
10A. Tuberculous Meningitis, ...	5	8	9	14	11	6	4	3	3	—	—	—	—	63	147	
10B. Abdominal Tuberculosis, ...	2	—	2	1	1	1	4	9	1	2	1	—	—	24	50	
10C. Other Tuberculous Diseases, ...	1	3	6	2	4	4	5	9	2	5	5	3	—	49	97	
1. Syphilis, ...	3	—	—	—	—	—	—	—	1	1	6	—	—	11	44	
2. General Paralysis of Insane (Tahes Dorsalis), ...	—	—	—	—	—	—	1	3	3	5	2	1	—	15	59	
3. Cancer, Malignant Disease, ...	—	—	1	—	—	1	2	15	56	142	246	211	112	786	1,496	
15D. Rheumatic Fever, ...	—	—	—	4	4	8	10	6	6	7	6	1	—	52	77	
4. Diabetes, ...	—	—	—	1	2	1	2	4	4	5	29	41	11	100	155	
5. Cerebral Hæmorrhage, &c., ...	3	—	1	1	—	2	—	2	13	41	106	194	182	545	1,026	
15E. Meningitis (not Tuberculous), ...	15	3	—	4	1	3	—	1	1	2	2	—	—	32	61	
15F. Other Nervous Diseases, ...	24	5	3	3	7	4	8	16	11	18	18	10	9	136	308	
6. Heart Disease, ...	4	1	3	12	13	13	12	49	78	132	238	356	320	1,231	2,358	
7. Aneurysm, ...	—	—	—	—	—	—	1	—	—	4	2	3	—	10	31	
8A. Arterio Sclerosis, ...	—	—	—	—	—	—	—	—	1	5	25	77	89	197	456	
8B. Other Circulatory Diseases, ...	2	1	1	—	—	—	—	1	—	7	11	10	8	41	91	
9. Bronchitis, ...	49	7	2	—	—	1	1	1	15	19	53	72	92	312	599	
10. Pneumonia (all forms), ...	324	115	52	14	7	8	10	38	46	35	58	60	77	844	1,917	
1. Other Respiratory Diseases, ...	8	3	—	4	—	2	—	7	5	9	16	17	37	108	216	
2. Peptic Ulcer, ...	—	—	—	—	—	—	—	2	8	3	9	6	2	30	112	
3. Diarrhœa, &c. (under 2 years), ...	167	15	—	—	—	—	—	—	—	—	—	—	—	182	421	
4. Appendicitis, ...	1	—	—	6	5	5	1	4	7	4	8	5	—	46	105	
5. Cirrhosis of Liver, ...	1	—	—	—	—	—	—	—	—	4	3	5	2	15	50	
6. Other Diseases of Liver, &c., ...	2	—	—	1	—	—	—	3	6	6	12	15	12	57	76	
7. Other Digestive Diseases, ...	8	7	5	5	1	4	2	5	10	22	29	26	24	148	335	
8. Acute and Chronic Nephritis, ...	—	—	3	—	1	3	6	18	24	32	57	40	21	205	403	
9. Puerperal Sepsis, ...	—	—	—	—	—	3	22	40	18	—	—	—	—	83	83	
10. Other Puerperal Causes, ...	—	—	—	—	—	3	9	54	29	1	—	—	—	96	96	
1. Congenital Debility, Premature Birth, Malformations, &c., ...	338	—	2	—	2	1	—	—	—	—	—	—	—	343	834	
2. Senility, ...	—	—	—	—	—	—	—	—	—	—	3	36	237	276	439	
3. Suicide and other Deaths from Violence, ...	18	14	9	13	7	10	7	12	14	25	27	30	27	213	607	
5. Other Defined Causes, ...	33	11	6	5	4	6	7	20	43	51	69	65	43	363	797	
15H. Causes Ill-Defined or Unknown, ...	10	2	—	—	1	—	1	5	11	26	37	47	23	163	389	
ALL CAUSES, ...	1,115	296	193	135	105	181	208	474	498	696	1,147	1,389	1,385	7,822	16,071	

TABLE X.—GLASGOW, 1932.—DEATHS OCCURRING IN INSTITUTIONS FOR THE TREATMENT OF THE SICK, NURSING HOMES, &c.

CAUSE OF DEATH.	Local Authority General Hospitals and Poorhouses.	Local Authority Fever Hospitals and Sanatoria.	Local Authority Mental Hospitals.	Voluntary Hospitals and Infirmaries.	Nursing Homes, &c.	Totals.	% of all Deaths.	Outward Transfer Deaths.
1. Typhoid and Paratyphoid Fever, ...	—	8	—	1	—	9	100·0	—
35A. Typhus Fever, ...	—	—	—	—	—	—	—	—
35B. Smallpox, ...	—	—	—	—	—	—	—	—
2. Measles, ...	6	137	—	—	—	143	76·5	5
3. Scarlet Fever, ...	—	86	—	—	—	86	84·3	5
4. Whooping Cough, ...	4	64	—	—	—	68	53·1	4
5. Diphtheria, ...	—	108	—	1	—	109	91·6	7
6. Influenza, ...	47	11	3	17	11	89	19·6	7
7. Encephalitis Lethargica, ...	5	1	3	—	—	9	47·4	—
8. Cerebro-spinal Fever, ...	2	70	—	8	—	80	95·3	17
35C. Erysipelas, ...	4	45	—	1	—	50	83·3	2
9. Tuberculosis of Respiratory System, ...	143	383	15	35	2	578	59·3	35
10A. Tuberculous Meningitis, ...	24	69	—	33	—	126	85·7	17
10B. Abdominal Tuberculosis, ...	4	13	1	9	2	29	58·0	14
10C. Other Tuberculous Diseases, ...	16	28	1	21	1	67	69·1	17
11. Syphilis, ...	25	4	2	6	—	37	84·1	4
12. General Paralysis of Insane (Tabes Dorsalis), ...	20	1	32	1	2	56	94·9	2
13. Cancer, Malignant Disease, ...	296	7	7	281	45	636	42·5	244
35D. Rheumatic Fever, ...	14	—	—	27	—	41	53·3	8
14. Diabetes, ...	36	3	1	37	4	81	52·3	28
15. Cerebral Hæmorrhage, &c., ...	295	3	7	77	15	397	38·7	59
35E. Meningitis (not Tuberculous), ...	10	14	1	15	—	40	65·6	9
35F. Other Nervous Diseases, ...	65	4	42	45	8	164	53·2	45
16. Heart Disease, ...	722	12	48	193	15	990	42·0	94
17. Aneurysm, ...	7	1	—	7	—	15	48·4	4
18A. Arterio-sclerosis, ...	98	1	21	24	11	155	34·0	9
18B. Other Circulatory Diseases, ...	22	—	2	22	3	49	53·8	21
19. Bronchitis, ...	128	6	—	24	2	160	26·7	14
20. Pneumonia (all forms), ...	433	510	20	164	13	1,140	59·5	103
21. Other Respiratory Diseases, ...	46	9	8	23	5	91	42·1	13
22. Peptic Ulcer, ...	14	—	2	65	8	89	79·5	54
23. Diarrhœa, &c. (under 2 years), ...	178	13	—	103	1	295	70·1	23
24. Appendicitis, ...	9	—	—	81	13	103	98·1	80
25. Cirrhosis of Liver, ...	7	1	1	13	1	23	46·0	8
26. Other Diseases of Liver, &c., ...	5	2	1	36	6	50	65·8	46
27. Other Digestive Diseases, ...	45	14	4	136	13	211	63·0	11
28. Acute and Chronic Nephritis, ...	98	6	7	90	10	212	52·6	5
29. Puerperal Sepsis, ...	6	65	—	8	1	80	96·4	1
30. Other Puerperal Causes, ...	22	—	1	55	2	80	83·3	1
31. Congenital Debility, Premature Birth, Malformations, &c., ...	129	12	1	222	10	374	44·8	8
32. Senility, ...	74	—	14	5	3	96	21·9	1
33. Suicide and other Deaths from								
34. } Violence, ...	40	3	1	277	3	324	53·4	15
35. } Other Defined Causes, ...	202	38	7	260	15	522	65·5	23
36. } Causes Ill-defined or Unknown, ...	9	1	1	25	2	38	9·8	1
YEAR, 1932, ...	3,310	1,753	254	2,448	227	7,992	49·7	1,70
YEAR, 1931, ...	2,909	2,095	289	2,368	222	7,883	50·8	1,62

TABLE XI.—GLASGOW, 1932.—DEATHS OF PERSONS WITH INSTITUTIONAL OR HARBOUR ADDRESS ONLY WITHIN THE CITY, ARRANGED ACCORDING TO USUAL RESIDENCE AS REGISTERED. (OUTWARD TRANSFERS EXCLUDED.)

CAUSE OF DEATH.	Staff with Acquired Institutional Residence.	OTHER THAN STAFF.						TOTAL.
		Corporation General and Mental Hospitals and Pro-houses.	Model Lodging Houses.	Other Institutions.	Harbour.	Residence out- with Glasgow but not transferable.	Residence out- with Scotland and not transferable.	
1. Typhoid and Paratyphoid Fevers, ...	—	—	—	—	—	—	—	—
5A. Typhus Fever, ...	—	—	—	—	—	—	—	—
5B. Smallpox, ...	—	—	—	—	—	—	—	—
2. Measles, ...	—	3	—	—	—	1	—	4
3. Scarlet Fever, ...	—	—	—	2	—	1	—	3
4. Whooping-cough, ...	—	—	—	—	—	—	—	—
5. Diphtheria, ...	—	—	—	—	—	6	—	6
6. Influenza, ...	1	3	2	2	1	—	1	10
7. Encephalitis Lethargica, ...	—	1	—	—	—	—	—	1
8. Cerebro Spinal Fever, ...	—	—	1	—	—	1	1	3
5C. Erysipelas, ...	—	1	1	1	—	2	—	5
9. Tuberculosis of Respiratory System, ...	1	4	46	5	2	3	—	61
0A. Tuberculous Meningitis, ...	1	—	—	—	—	—	—	1
0B. Abdominal Tuberculosis, ...	—	—	—	—	—	—	—	—
0C. Other Tuberculous Diseases, ...	—	—	—	—	—	1	—	1
1. Syphilis, ...	—	2	6	—	—	—	—	8
2. General Paralysis of Insane (Tabes Dorsalis), ...	—	1	1	3	—	—	—	5
3. Cancer, Malignant Disease, ...	—	6	36	11	—	1	5	59
5D. Rheumatic Fever, ...	1	—	—	1	—	—	—	2
4. Diabetes, ...	—	—	—	1	—	—	—	1
5. Cerebral Hæmorrhage, &c., ...	—	16	35	16	—	—	—	67
6. Heart Disease, ...	—	29	119	19	1	—	2	170
5E. Meningitis (not Tuberculous), ...	—	2	1	—	—	—	1	4
5F. Other Nervous Diseases, ...	—	4	8	4	—	—	—	16
7. Aneurysm, ...	—	—	2	—	—	—	—	2
8A. Arterio-sclerosis, ...	—	3	16	6	—	—	—	25
8B. Other Circulatory Diseases, ...	—	1	1	3	—	—	—	5
9. Bronchitis, ...	—	9	27	8	—	1	—	45
0. Pneumonia (all forms), ...	—	7	36	10	4	1	—	58
1. Other Respiratory Diseases, ...	—	1	5	2	—	—	1	9
2. Peptic Ulcer, ...	—	—	3	—	—	—	1	4
3. Diarrhœa, &c. (under 2 years), ...	—	5	—	6	—	—	—	11
4. Appendicitis, ...	—	—	2	—	—	—	2	4
5. Cirrhosis of Liver, ...	—	—	3	—	—	—	—	3
6. Other Diseases of Liver, &c., ...	—	—	1	1	—	—	2	4
7. Other Digestive Diseases, ...	—	1	10	3	1	—	—	15
8. Acute and Chronic Nephritis, ...	—	1	17	1	—	—	1	20
9. Puerperal Sepsis, ...	—	—	—	—	—	—	—	—
0. Other Puerperal Causes, ...	—	—	—	—	—	—	1	1
1. Congenital Debility, Premature Birth, Malformation, &c., ...	—	—	—	8	1	1	—	10
2. Senility, ...	—	9	19	18	—	—	—	46
3. Suicide and other Deaths from	—	—	—	—	—	—	—	—
4. Violence, ...	—	3	20	5	7	—	3	38
5. Other Defined Causes, ...	1	7	24	6	—	—	5	43
6. Causes Ill-Defined or Unknown, ...	—	—	38	—	—	—	—	38
ALL CAUSES, ...	5	119	480	142	17	19	26	808

TABLE XII.—GLASGOW.—DEATHS UNDER 1 YEAR AND DEATH-RATES PER 1,000 BIRTHS IN EACH MUNICIPAL WARD, FOR THE YEAR 1932.

MUNICIPAL WARDS.	Deaths —1 Year.	Death Rate per 1,000 Births.		
	1932.	1932.	1931.	1930.
1. Shettleston and Tollcross, ...	104	107	90	87
2. Parkhead, ...	109	127	83	104
3. Dalmarnock, ...	120	120	127	96
4. Calton, ...	103	140	140	131
5. Mile-end, ...	90	145	117	128
6. Whitevale, ...	91	167	100	126
7. Dennistoun, ...	41	95	82	70
8. Provan, ...	103	98	124	101
9. Cowlairs, ...	35	76	90	73
10. Springburn, ...	53	104	93	98
11. Townhead, ...	78	129	129	87
12. Exchange, ...	51	136	150	153
13. Blythswood, ...	34	163	119	124
14. Anderston, ...	84	129	126	105
15. Sandyford, ...	53	135	111	100
16. Park, ...	14	81	71	65
17. Cowcaddens, ...	127	126	119	120
18. Woodside, ...	106	135	114	103
19. Ruchill, ...	100	111	109	96
20. North Kelvin, ...	42	96	97	81
21. Maryhill, ...	58	101	78	102
22. Kelvinside, ...	4	24	34	11
23. Partick (East), ...	48	99	77	104
24. „ (West), ...	47	97	92	78
25. Whiteinch, ...	65	66	61	72
26. Hutchesontown, ...	105	100	118	124
27. Gorbals, ...	152	127	127	128
28. Kingston, ...	106	132	105	118
29. Kinning Park, ...	95	110	102	89
30. Govan.	116	134	127	125
31. Fairfield, ...	48	87	93	85
32. Pollokshields, ...	11	44	34	66
33. Camphill, ...	9	45	90	69
34. Pollokshaws, ...	32	81	68	49
35. Govanhill, ...	46	87	77	85
36. Langside, ...	4	27	67	49
37. Cathcart, ...	26	75	46	50
Institutions, ...	30	—	—	—
Harbour, ...	2	—	—	—
CITY, ...	2,542	112	105	10

TABLE XIII.—GLASGOW, 1932.—MALE INFANT DEATHS AT GIVEN AGES AND FROM SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.				Total 4 weeks.	AGE IN MONTHS.								Total -1 year.			
	AGE IN WEEKS.					AGE IN MONTHS.											
	-1	-2	-3	-4		-2	-3	-4	-5	-6	-7	-8	-9		-10	-11	-12
I. CONGENITAL MALFORMATIONS, ...	28	9	5	5	47	11	9	2	2	1	1	1	—	1	—	—	76
II. DISEASES OF EARLY INFANCY, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	406
(a) Congenital Debility, Sclerema, and Icterus, ...	31	10	8	6	55	12	4	3	3	3	2	—	—	—	—	1	83
(b) Premature Birth, ...	183	23	16	14	236	14	6	—	—	—	—	—	—	—	—	1	257
(c) Injury at Birth, ...	29	1	2	1	33	1	—	1	—	—	—	—	—	—	—	—	35
(d) Atelectasis, ...	11	—	2	—	13	2	—	—	—	—	—	—	—	—	—	—	15
(e) Others, ...	8	3	2	1	14	2	—	—	—	—	—	—	—	—	—	—	16
III. DISEASES OF RESPIRATORY SYSTEM, ...	2	6	14	6	28	54	50	43	41	46	31	42	31	31	18	24	439
IV. DISEASES OF DIGESTIVE SYSTEM, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	247
(a) Diarrheal, ...	1	3	3	3	10	28	43	35	34	31	15	8	11	5	1	7	228
(b) Others, ...	—	—	—	—	—	3	—	1	3	2	2	5	1	1	1	—	19
V. DISEASES OF NERVOUS SYSTEM, ...	7	1	4	1	13	2	3	10	4	6	3	—	2	3	2	—	48
VI. TUBERCULOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16
(a) Pulmonary Tuberculosis, ...	—	—	—	—	—	—	—	—	—	2	—	—	—	—	1	—	3
(b) Tuberculous Meningitis, ...	—	—	—	—	—	—	—	1	1	2	1	—	—	3	2	1	11
(c) Abdominal Tuberculosis, ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
(d) Other Forms, ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	2
VII. INFECTIOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	99
(a) Measles, ...	—	—	—	—	—	—	—	1	2	2	3	—	7	7	8	5	35
(b) Scarlet Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
(c) Whooping-cough, ...	—	—	—	—	—	1	1	—	1	2	3	3	4	5	2	3	25
(d) Diphtheria, ...	—	—	—	—	—	1	—	1	1	1	—	—	—	2	1	2	7
(e) Erysipelas, ...	—	1	1	—	2	2	—	1	1	1	2	3	2	3	—	1	23
(f) Cerebro-spinal Fever, ...	—	—	—	—	—	—	3	1	5	3	1	—	1	—	—	—	1
(g) Varicella, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
(h) Typhoid and Paratyphoid Fevers, ...	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	5
VIII. SEPTICÆMIAS, ...	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—
IX. OVERLAYING, ...	—	—	1	—	1	1	1	—	—	—	—	—	—	—	—	—	3
X. OTHER VIOLENCE, ...	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	5
XI. ALL OTHER CAUSES, ...	6	2	3	5	16	7	6	3	11	8	8	6	4	8	1	5	83
TOTALS, ...	308	59	61	42	470	142	127	103	108	110	72	69	64	69	39	54	1,427

TABLE XIV.—GLASGOW, 1932.—FEMALE INFANT DEATHS AT GIVEN AGES AND FROM SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.				Total - 4 weeks.	AGE IN MONTHS.										Total - 1 year.	
	AGE IN WEEKS.					AGE IN MONTHS.											
	-1	-2	-3	-4		-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
I. CONGENITAL MALFORMATIONS, ...	14	2	9	—	25	11	6	1	3	—	—	2	1	—	—	49	
II. DISEASES OF EARLY INFANCY, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	289	
(a) Congenital Debility, Sclerema, and Icterus, ...	19	13	9	6	47	8	3	2	3	1	—	1	—	1	—	66	
(b) Premature Birth, ...	110	11	16	8	145	22	6	1	—	—	—	—	—	—	—	174	
(c) Injury at Birth, ...	27	1	1	1	30	—	—	—	—	—	—	—	—	—	—	30	
(d) Atelectasis, ...	7	1	—	—	8	—	—	—	—	—	—	—	—	—	—	8	
(e) Others, ...	4	4	1	—	9	1	1	—	—	—	—	—	—	—	—	11	
III. DISEASES OF RESPIRATORY SYSTEM, ...	—	7	8	5	20	40	34	36	49	33	29	29	21	39	27	381	
IV. DISEASES OF DIGESTIVE SYSTEM, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	179	
(a) Diarrhoeal, ...	1	2	4	3	10	21	21	25	22	25	9	12	5	8	5	167	
(b) Others, ...	3	3	3	2	11	2	5	9	3	3	2	1	3	2	—	42	
V. DISEASES OF NERVOUS SYSTEM, ...	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	12	
VI. TUBERCULOUS DISEASES, ...	—	—	—	—	—	—	—	—	1	1	—	1	—	—	—	10	
(a) Pulmonary Tuberculosis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2	
(b) Tuberculous Meningitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	
(c) Abdominal Tuberculosis, ...	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	
(d) Other Forms, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
VII. INFECTIOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	82	
(a) Measles, ...	—	—	—	—	—	—	—	—	—	1	2	3	2	3	8	25	
(b) Scarlet Fever, ...	—	—	—	—	—	—	—	—	—	—	1	1	—	2	—	6	
(c) Whooping-cough, ...	—	—	—	—	—	—	1	2	3	3	4	2	3	—	3	22	
(d) Diphtheria, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	
(e) Erysipelas, ...	—	1	—	1	2	2	1	2	1	1	—	2	—	—	—	9	
(f) Cerebro-spinal Fever, ...	—	—	—	1	1	1	—	1	2	1	1	3	3	1	1	15	
(g) Varicella, ...	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	
(h) Typhoid and Paratyphoid Fevers, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	
VIII. SYPHILIS, ...	—	—	—	—	—	—	1	—	1	—	1	—	—	—	—	5	
IX. OVERLAYING, ...	—	2	—	—	2	1	1	1	—	—	—	—	—	—	—	13	
X. OTHER VIOLENCE, ...	6	—	—	1	7	1	1	1	—	1	—	—	1	—	1	62	
XI. ALL OTHER CAUSES, ...	3	2	2	2	9	6	7	6	8	5	5	2	—	7	2		
TOTALS, ...	194	50	53	30	327	117	88	91	96	78	56	57	40	64	55	46	1,115

TABLE XV.—GLASGOW, 1930-1932.—ABSTRACT OF NOTIFICATIONS UNDER NOTIFICATION OF BIRTHS ACT, 1907, AND RESULTS OF VISITS.

	1932.	1931.	1930.
Total Number of Notifications, ...	23,711	23,995	24,407
Doctor at Home, ...	5,554	6,001	6,394
Doctor in Institution, ...	5,629	4,925	4,346
Maternity Hospital (Outdoor) Nurse, ...	4,656	4,234	3,975
Other Institutional Nurse, ...	10	4	3
Certified Midwife, ...	7,842	8,814	9,676
Others, ...	20	17	13
Total Cards issued, ...	18,157	17,994	18,013
Total Cards returned, ...	18,148	18,007	17,670
Full Information, ...	17,455	17,273	16,968
Doctor found in Attendance, ...	9	6	7
Wrong Address—Not Traced, ...	—	—	—
Others, ...	684	728	695

TABLE XVI.—GLASGOW, 1930-1932.—BIRTHS NOTIFIED SHOWING MEDICALLY AND NOT MEDICALLY ATTENDED.

	1932.	1931.	1930.
Notifications Received— <i>less Duplicates</i> —			
Total, ...	23,711	23,995	24,407
Live-births, ...	22,726	22,992	23,376
Still-births, ...	985	1,003	1,031
Per cent. Still-births to Total, ...	4·2	4·2	4·2
Medically attended—			
Births at Home, ...	5,554	6,001	6,394
In Institutions, ...	5,629	4,925	4,346
Total, ...	11,183	10,926	10,740
Per cent., ...	47·2	45·5	44·0
Still-births at Home, ...	193	211	250
Still-births in Institutions, ...	452	414	380
Not Medically attended—			
Maternity Hospital, Outdoor Nurse, ...	4,656	4,234	3,975
Other Institutional Nurses, ...	10	4	3
Certified Midwives, ...	7,842	8,814	9,676
Others, ...	20	17	13
Total, ...	12,528	13,069	13,667
Per cent., ...	52·8	54·5	56·0
Still-births, ...	340	378	401

TABLE XVII.—GLASGOW, 1931 AND 1932.—CASES OF INFECTIOUS DISEASE REGISTERED AND NUMBERS OF THESE TREATED IN FEVER HOSPITALS, &c

	1932.				1931.			
	Fever Hosp.	Other Institutions.	Home.	Total.	Fever Hosp.	Other Institutions.	Home.	Total.
A.—Notifiable—								
Typhus Fever, ...	—	—	—	—	1	—	—	1
Enteric Fever, ...	47	2	—	49	67	—	—	7
Paratyphoid B, ...	24	—	3	27	40	1	3	4
Continued and Undefined Fever, ...	—	—	1	1	1	—	2	3
Puerperal Fever, ...	419	233	58	710	405	194	64	3
Puerperal Pyrexia, ...	71	143	102	316	56	112	60	8
Smallpox, ...	—	—	—	—	—	—	—	—
Scarlet Fever, ...	7,153	2	2,003	9,158	6,129	3	888	7,0
Diphtheria and Membranous Croup, ...	2,088	1	64	2,153	2,049	6	53	2,8
Erysipelas, ...	538	15	492	1,045	548	16	533	1,7
Cholera, ...	—	—	—	—	—	—	—	—
Cerebro-spinal Fever, ...	132	12	7	151	161	14	7	2
Ophthalmia Neonatorum, ...	62	—	951	1,013	58	—	747	5
Trachoma, ...	—	6	18	24	—	12	20	2
Acute Encephalitis Lethargica, ...	4	—	7	11	4	—	6	0
Acute Polio-Encephalitis, ...	—	—	—	—	—	—	—	—
Acute Poliomyelitis, ...	—	2	2	4	4	—	—	4
Acute Primary Pneumonia, ...	3,003	743	3,144	6,890	3,104	485	1,564	5,3
Acute Influenzal-Pneumonia, ...	236	52	377	665	173	17	167	†
Malaria, ...	1	1	10	12	1	—	12	3
Dysentery, ...	95	7	34	136	49	4	26	9
Infective Jaundice, ...	—	—	—	—	—	—	—	—
Anthrax, ...	—	—	—	—	1	—	—	1
Pulmonary Tuberculosis, ...	1,127	—	595	1,722	993	—	709	1,2
Other Forms of Tuberculosis, ...	448	—	509	957	441	—	535	6
B.—Not Notifiable—								
Measles, ...	681	32	4,866	5,579	1,784	15	13,573	15,2
German Measles, ...	76	7	598	681	6	1	108	5
Whooping-cough, ...	337	13	4,316	4,666	890	9	8,320	9,9
Chickenpox,*	179	5	6,954	7,138	241	6	7,472	7,9
Mumps, ...	17	—	1	18	4	—	2	6
Totals, ...	16,738	1,276	25,112	43,126	17,210	895	34,871	52,6
Notified, but diagnosis altered to Non-Infectious Diseases, ...	1,362	2	8	1,372	1,193	5	6	1,4
Total Registered, ...	18,100	1,278	25,120	44,498	18,403	900	34,877	54,0

† Where patients suffer from two or more diseases, each disease is reckoned as a case.

* Made compulsorily notifiable in March, 1927.

TABLE XVIII.—GLASGOW, 1928-1932.—CASE-RATES *per Million*
FOR INFECTIOUS DISEASES.

	CASE RATES PER MILLION.				
	1932.	1931.	1930.	1929.	1928.
A.—Notifiable—					
typhus Fever, ...	—	1	2	—	—
typhoid Fever and Paratyphoid B, ...	69	102	129	78	53
continued and Undefined Fever, ...	1	3	4	5	4
intermittent Fever, ...	649	609	549	474	379
intermittent Pyrexia, ...	289	209	216	45	—
smallpox, ...	—	—	3	20	—
scarlet Fever, ...	8,365	6,449	4,555	3,079	2,971
diphtheria and Membranous Croup, ...	1,967	1,937	2,407	1,945	2,414
erysipelas, ...	955	1,008	1,156	1,008	846
cholera, ...	—	—	—	—	—
cerebro-spinal Fever, ...	138	167	136	186	94
ophthalmia Neonatorum, ...	925	740	755	588	635
echinococcosis, ...	22	29	23	41	28
acute Encephalitis Lethargica, ...	10	9	29	30	31
acute Polio-Encephalitis, ...	—	—	3	1	2
acute Poliomyelitis, ...	4	4	21	24	109
acute Primary Pneumonia, ...	6,294	4,734	5,895	6,469	5,202
acute Influenzal-Pneumonia, ...	607	328	319	1,082	371
malaria, ...	11	12	20	29	22
typhus, ...	124	73	68	109	41
infective Jaundice, ...	—	—	5	—	—
pulmonary Tuberculosis, ...	1,573	1,564	1,549	1,656	1,582
other Forms of Tuberculosis, ...	874	897	962	911	1,016
B.—Not Notifiable—					
scarlet fever, ...	5,096	14,123	11,393	5,938	9,268
German Measles, ...	622	106	154	1,339	241
whooping-cough, ...	4,262	8,470	5,315	4,686	7,454
chickenpox, ...	6,520	7,092	6,617	7,440	5,105
measles, ...	16	5	13	9	12
Totals, ...	39,393	48,671	42,298	37,192	37,880

TABLE XI.

CASES OF INFECTIOUS DISEASE REGISTERED IN EACH MONTH—SHOWING NUMBERS

	Typhus Fever.		Enteric, including Paratyphoid Fever.		Continued and Undefined Fever.		Puerperal Fever.		Puerperal Pyrexia.		Smallpox.		Scarlet Fever.		Diphtheria and Membranous Croup.		Erysipelas.		Cerebro-spinal Fever.		Ophthalmia Neonatorum.		Trachoma.		Acute Encephalitis Lethargica.		Acute Folio-Encephalitis.		Polio-myelitis.	
	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.
Jan.,	...	...	4	2	...	1	39	11	5	11	...	...	694	216	206	6	50	52	13	5	5	74	...	2	...	1	...	...	...	1
Feb.,	...	...	4	1	...	...	31	19	6	27	...	...	701	205	237	8	50	38	14	3	4	66	...	2	...	...	...	...	...	...
March,	...	...	3	...	...	...	48	27	5	24	...	...	624	237	200	7	66	72	12	2	1	92	...	1	1	...	...	...	...	...
April,	...	...	8	1	...	...	30	30	5	17	...	...	655	160	198	8	56	44	14	3	12	96	...	2	...	...	...	...	...	...
May,	...	...	3	...	...	...	44	23	7	17	...	...	727	162	144	3	40	41	16	3	7	82	...	1	...	...	...	...	...	1
June,	...	...	5	1	...	...	33	31	4	16	...	...	624	132	144	7	44	44	15	1	5	81	...	...	...	...	...	...	...	...
July,	...	...	8	...	...	...	22	30	7	18	...	...	390	36	105	3	34	24	7	...	7	51	...	2	...	...	...	...	...	...
August,	...	...	14	...	...	...	28	22	4	15	...	...	436	31	131	1	32	36	5	...	8	84	...	5	1	4	...	...	...	...
Sept.,	...	...	7	...	...	...	36	18	1	15	...	...	492	74	161	6	38	29	7	...	3	59	...	1	...	...	...	...	...	...
October,	...	...	5	...	...	...	37	37	12	17	...	...	630	224	211	6	39	42	9	1	3	84	...	6	1	1	...	...	...	1
Nov.,	...	...	6	...	...	...	26	18	2	21	...	...	600	253	193	6	40	49	5	...	4	79	...	2	1	1	...	...	...	1
Dec.,	...	...	4	...	...	...	45	25	13	47	...	...	580	275	158	4	49	36	15	1	3	103	...	...	...	...	...	...	...	...
	...	...	71	5	...	1	419	291	71	245	...	...	7153	2005	2088	65	538	507	132	19	62	951	...	24	4	7	...	...	...	4

TABLE XX.—HOSPITAL BED ACCOMMODATION FOR INFECTIOUS DISEASES
IN GLASGOW SINCE 1865 (EXCLUDING TUBERCULOSIS).

YEAR.	PARISH.			Glasgow Royal Infirmary.	LOCAL AUTHORITY.						Total Beds.	Population in Thousands.	Thousand.
	City.	Barony.	Govan.		Parliamen- tary Road.	Belvidere Fever.	Belvidere Smallpox.	Ruchill.	Shieldhall.	Knights- wood.			
1865	100	120	54	200	136	—	—	—	—	—	610	428	4
1866	100	120	54	175	136	—	—	—	—	—	585	438	3
1867	—	120	54	100	136	—	—	—	—	—	410	446	0
1869	—	120	54	135	136	—	—	—	—	—	445	464	0
1870	—	120	54	100	250	250	—	—	—	—	774	471	7
1872	—	120	—	100	250	250	—	—	—	—	720	495	4
1875	—	—	—	100	250	250	—	—	—	—	600	500	2
1876	—	—	—	—	250	250	—	—	—	—	500	502	0
1878	—	—	—	—	120	250	150	—	—	—	520	507	0
1880	—	—	—	—	120	250	150	—	—	—	520	510	0
1881	—	—	—	—	120	370	150	—	—	—	640	512	2
1882	—	—	—	—	120	220	150	—	—	—	490	518	0
1887	—	—	—	—	120	390	150	—	—	—	660	545	2
1893	—	—	—	—	200	390	150	—	—	—	740	678	1
1900	—	—	—	—	200	390	150	440	—	—	1,180	744	6
1901	—	—	—	—	200	390	220	440	—	—	1,250	764	6
1906	—	—	—	—	—	390	220	440	—	—	1,050	836	3
1910	—	—	—	—	—	390	220	542	—	—	1,152	884	3
1913	—	—	—	—	—	390	220	542	100	81	1,333	1,032	3
1915	—	—	—	—	—	390	220	542	100	10	1,262	1,035	2
1923	—	—	—	—	—	610	—	542	100	114	1,366	1,074	3
1925	—	—	—	—	—	610	—	542	100	134	1,386	1,090	3
1926	—	—	—	—	—	610	—	542	120	134	1,406	1,090	3
1929	—	—	—	—	—	610	—	542	100	170	1,422	1,089	3
1930	—	—	—	—	—	*642	—	542	100	170	1,454	1,089	4
1932	—	—	—	—	—	*642	—	542	100	170	1,454	1,095	3

* Ward for Venereal Diseases with 24 beds not included.

The City has also a part interest in Lightburn Hospital—about 8 beds.

"	"	"	Darnley	"	"	20	"
"	"	"	Blawarthill	"	"	7	"

Smallpox accommodation (20 beds) is provided at Robroyston Hospital, and in the event of an epidemic of smallpox the tuberculosis wards of Robroyston Auxiliary Hospital (100 beds) would be utilised in the first place, and, if necessary, the wards of the main hospital.

Puerperal Fever accommodation (56 beds) has been provided at Robroyston Hospital since October, 1930.

TABLE XX.—(Continued).

STITUTIONAL ACCOMMODATION FOR FEVER AND TUBERCULOSIS PATIENTS :—

			Fever.	Tuberculosis.	Total.
Belvidere Hospital, ...	...	...	*642	—	642
Ruchill Hospital, ...	...	...	542	272	814
Shieldhall Hospital, ...	...	...	100	—	100
Knightswood Hospital, ...	...	...	170	88	258
Bellefield Sanatorium, ...	...	...	—	108	108
Robroyston Sanatorium, ...	...	...	76	492	568
Mearnskirk Sanatorium, ...	...	...	—	466	466
Baird Street Reception House, ...	...	...	†	24	24
			1,530	1,450	2,980
Stobhill General Hospital, ...	...	...	—	55	55
Eastern District General Hospital, ...	...	...	—	2	2
Western District General Hospital, ...	...	...	—	5	5
			—	62	62‡
Barnhill Institution, ...	...	...	—	44	44
Southern General Hospital, ...	...	...	—	20	20
			—	64	64‡
Beds in Corporation Institutions, ...	...	...	1,530	1,576	3,106
Ochil Hills Sanatorium, ...	...	...	—	38	38
Bridge of Weir Sanatorium, ...	...	...	—	72	72
Blawarthill Hospital, ...	...	...	8	2	10
Hairmyres Sanatorium, ...	...	...	—	3	3
Lanfine Home, ...	...	...	—	17	17
Darnley Hospital, ...	...	...	19	12	31
Lightburn Hospital, ...	...	...	7	—	7
Beds in other Institutions, ...	...	...	34	144	178‡
TOTAL, ...	...	...	1,564	1,720	3,284

* Accommodation for Venereal Disease (24 beds) excluded.

† Accommodation for Venereal Disease and Ophthalmia Neonatorum (24 beds) excluded.

‡ Average daily number occupied during 1932.

SHOWING NUMBER, AVERAGE RESIDENCE, AD

COST OF TREATMENT OF PATIENTS (Calculated by deducting from ordinary expenditure items of revenue received otherwise than for the treatment of patients and excluding Interest and Sinking Fund Charges):—

Infectious Diseases Hospital, Belvidere, ...	£67,990	3	7
Infectious Diseases Hospital, Ruchill, ...	95,311	11	3
Infectious Diseases Hospital, Shieldhall, ...	13,532	9	9
Infectious Diseases Hospital, Knightswood, ...	26,996	17	2
Sanatorium and Auxiliary Hospital, Robroyston, ...	51,984	9	1
Bellefield Sanatorium, ...	12,734	14	7
Mearns Kirk Hospital, ...	40,590	14	10
		£309,141	3

Average Residence of Patients dismissed, 1931-1932, ...	50.4 days.
Average Daily Expenditure, ...	£844 11
Average Daily Cost per Patient, ...	
Average Cost of Treatment per Patient, ...	15
Average Cost of Bed per Year, ...	103

NUMBER OF PATIENTS TREATED IN HOSPITALS AND SANATORIA
AND AVERAGE DAILY COST PER PATIENT.

	Remain- ing, 31/5/31.	Admitted 1931/32.	Total under Treatment.	Dismissed, 1931/32.	Remain- ing, 31/5/32.	Average Daily Number.	Average Daily Cost per Patient.
Belvidere Hospital, ...	614	6,643	7,257	6,637	620	642	5/
Ruchill Hospital, ...	899	7,999	8,898	7,963	935	914	5/
Shieldhall Hospital, ...	103	1,096	1,199	1,102	97	98	7/
Knightswood Hospital, ...	310	2,659	2,969	2,676	293	281	5/
Robroyston Sanatorium and Auxiliary Hos- pital, ...	501	1,227	1,728	1,219	509	505	5/
Bellefield Sanatorium, ...	109	165	274	162	112	110	6/
Mearns Kirk Hospital, ...	439	402	841	335	506	455	4/
Total, ...	2,975	20,191	23,166	20,094	3,072	3,005	5*
Darnley Joint Hospital, ...	24	102	126	110	16	19	
Lightburn Joint Hospital, ...	10	65	75	66	9	7	
Blawarthill Joint Hos- pital, ...	5	76	81	69	12	8	
Grand Total, ...	3,014	20,434	23,448	20,339	3,109	3,039	

* Interest and Sinking Fund averages 1/6 per patient day.

LXI.

COST OF TREATMENT OF PATIENTS, 1931-1932.

PATIENTS DISMISSED FROM CORPORATION INSTITUTIONS, CLASSIFIED AS TO DISEASE, AVERAGE RESIDENCE OF PATIENTS DISMISSED, AND AVERAGE COST AT THE DAILY RATE OF 7/2 GIVEN ABOVE.

				Number Dismissed.	Average Residence.	Average Cost.
typhus Fever,...	...	...	...	—	—	—
smallpox, ...	...	...	...	—	—	—
enteric Fever,...	...	...	...	100	54.46 days.	£19 10 3
interperal Fever, ...	...	...	...	492	37.53 „	13 9 0
scarlet Fever, ...	...	...	...	7,174	36.14 „	12 19 0
diphtheria, ...	...	...	...	2,150	45.50 „	16 6 1
encephalitis Lethargica, ...	...	...	...	5	234.00 „	83 17 0
poliomyelitis, ...	...	...	...	3	106.33 „	38 2 0
leukemia, ...	...	...	...	—	—	—
acute Primary Pneumonia and Influenza-Pneumonia, ...	...	...	...	3,053	31.23 „	11 3 10
tropical Diseases, ...	...	...	...	71	29.01 „	10 7 11
measles, ...	...	...	...	2,298	30.60 „	10 19 4
whooping-cough, ...	...	...	...	365	49.85 „	17 17 3
diphtheria, ...	...	...	...	1,442	146.10 „	52 7 1
non-Pulmonary Tuberculosis, ...	...	...	...	650	271.15 „	97 3 3
other Infectious Diseases, ...	...	...	...	1,144	27.78 „	9 19 1
other Diseases, ...	...	...	...	1,147	22.02 „	7 17 10

TABLE XXII.—SPECIAL SANITARY OPERATIONS.—(a) FOOD AND DRUGS, &c.

	Year.	1932.	1931.	1930.
I. Dairies.				
Registered during year, ...		263	238	221
Removed from Register, ...		237	195	207
On Register at 31st Dec., ...		1,759	1,733	1,690
Number of Inspections, ...		21,960	23,142	23,271
Contraventions of Orders or Regulations, ...		58	29	19
Prosecutions for same, ...		48	22	11
Repairs or Improvements effected, ...		15	24	19
II. Dealers in Ice Cream.				
Registered during the year, ...		53	40	65
Removed from Register, ...		49	62	78
On Register at 31st Dec., ...		587	583	605
Number of Inspections, ...		8,185	8,954	9,389
Contraventions of Orders or Regulations, ...		3	7	2
Prosecutions for same, ...		1	—	1
Repairs or Improvements effected, ...		3	4	3
III. Byres for Milch Cows.				
Number of Dairy Byres as at 31st Dec., ...		53	53	53
„ Cows licensed for, ...		1,212	1,194	1,217
Average number kept, ...		980	996	1,025
Number of Inspections, ...		460	490	550
IV. Unwholesome Food.				
Number of Inspections, ...		12,011	13,061	13,419
„ Lots dealt with, ...		42	30	37
Nature of Food destroyed at Inspector's instance with Owners' consent—				
Cheese, ... (lbs.)		5	—	—
Canned Food (various), ...		36	—	—
Flour, ...		70	—	—
Fruit (Dried and Soft), ...		25,832	24,052	4,666
Pork (Cured), ...		414	—	289
Pork (Fresh), ...		714	307	—
Milk (Condensed), ...		—	28	—
Mustard, ...		24	—	—
Liquorice Root, ...		—	112	—
Vegetables, ...		35,280	31,080	16,148
Eggs (Canned and Frozen), ...		459	51	41
„ (in shell), ...		360	—	—
Chestnuts, ...		—	—	4,704
Potted Meat, ...		—	—	66
Prosecutions, ...		—	—	—

TABLE XXII.—*Continued.*

Year.	1932.	1931.	1930.
V. Food and Drugs (Adulteration) Act.			
Informal Samples analysed, ...	3,822	3,789	3,913
Statutory Samples analysed, ...	1,285	1,332	1,355
" " found non-genuine, ...	67	66	68
Proceedings instituted, ...	52	40	54
Number of Convictions, ...	49	38	54
Amount of Fines imposed, ...	£156 9/3	£134 15/9	£210
Number dismissed or found "Not proven,"	—	—	—
" deserted <i>simpliciter</i> , ...	1	1	—
" withdrawn and Expenses paid, ...	2	1	—
Amount of Expenses paid, ...	£2 2/-	£2	—
Prosecutions for Margarine offences, ...	—	1	—
Fines and Expenses imposed, ...	—	£3 5/9	—
Non-convictions, ...	—	—	—
Obstruction, ...	—	—	—
Fines imposed, ...	—	—	—
Sending Milk without name and address being on vessel,—	—	—	—
Number of Convictions, ...	—	—	—
Amount of Fines, ...	—	—	—
Refusal to Sell, ...	—	—	—
Number of Convictions, ...	—	—	—
Amount of Fines, ...	—	—	—
VI. The Sale of Horse-Flesh Regulation Act, 1899.			
Number of premises in which Horse-flesh is sold,	—	—	—
Prosecutions for contraventions of Act, ...	—	—	—
Fines imposed, ...	—	—	—
I. Merchandise Marks Acts and Orders.			
Number of Prosecutions, ...	24	12	16
" Convictions, ...	24	12	14
Amount of Fines imposed, ...	£23	£14	£31
VIII. Fish and Game Inspection.			
Under the Glasgow Police Amendment Act, 1890.			
Number of Packages of Fish, Game, Poultry, and Rabbits passed through Fish Market,	2,181,838	1,939,789	1,855,056
" Inspections of Fish Shops, Restaurants, and Hawkers' Barrows and Carts,	1,436	1,231	1,176
" Nuisances discovered therein, ...	—	—	—
Fish and Game destroyed with consent—			
Fresh Fish, ... (lbs.)	41,143	88,671	119,059
Cured "	17,809	13,571	15,504
Shell "	826	982	770
Crabs and Lobsters, ...	147	438	202
Venison, ...	495	1,088	1,404
Rabbits, ...	7,000	5,041	3,274
Poultry and Game, ...	2,990	4,446	2,370
Eggs, ...	48	—	50

TABLE XXII.—*Continued.*

(b) AIR PURIFICATION.

	Year.	1932.	1931.	1930.
Smoke Prevention.				
Glasgow Police (Further Powers) Act, 1892, Sec. 31, and Motor Vehicles (Construction and Use) Regulations, 1931.				
Number of Inspections of Boiler and other Furnaces,		1,300	1,307	1,436
„ Observations of Chimneys, ...		28,575	28,344	28,464
„ Intimations of Excess Smoke given,		328	342	342
„ Warning Notices to those contravening the Act, ...		22	20	16
„ Prosecutions in Police Courts, ...		49	48	35
„ Convictions, ...		48	40	31
Amount of Fines imposed, ...		£57 5/-	£53 15/-	£44 10/6
Number of Prosecutions withheld on receiving a promise from Offenders to improve the Furnace Plant, ...		—	3	—
„ Prosecutions withheld on account of accidents to Furnace Plant, or regular Fireman temporarily off duty,		—	1	—
„ New Steam Boilers installed to give increased power, ...		9	14	20
„ Mechanical Stokers fitted to Steam Boiler Furnaces, ...		4	18	5
„ Steam Boiler Furnaces fitted with Smoke-preventing Appliances, ...		4	3	9
„ Furnaces in which Anthracite, Coke, or other non-bituminous Fuel has been substituted for ordinary Coal, ...		24	20	20
„ Furnaces adapted for Smokeless Combustion of Oil Fuel, ...		1	2	1
„ Steam Boilers replaced by Electric Motors (using Corporation power),...		6	11	3
„ Furnaces formerly Coal-fired, reconstructed for use of Corporation gas,		—	1	—
„ New Chimneys erected or existing Chimneys heightened to give increased draught and carry gases higher, ...		11	15	14
„ Improvements to Furnaces not coming under any of the above headings,...		17	14	6
Spraying Dungsteads, Ashpits, and Privies.				
Total number of Dungsteads Sprayed from May till September, ...		14,895	15,216	17,080
Total Outlay for Wages, Plant, and Material, ...		£382	£329	£480

TABLE XXIII.

OPERATIONS OF SANITARY SECTION.

1. (a) Nuisances.	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1932.	1931.
SPECTIONS made—							
Nuisances, ...	131,943	137,345	192,569	169,071	171,237	802,165	766,535
Underground Dwellings, ...	—	—	—	—	—	—	—
Water Storage Cisterns, ...	321	1,153	1,071	434	151	3,130	3,014
Limewashings, ...	4,807	3,610	9,119	3,862	9,431	30,829	30,661
Stair Cleaning, ...	33,016	8,674	23,935	4,246	32,150	102,021	85,014
Drain Testing, ...	16,659	11,709	5,730	7,413	5,450	46,961	44,061
Total, ...	186,746	162,491	232,424	185,026	218,419	985,106	929,285
Nuisances removed or remedied,	10,596	11,328	15,441	6,984	17,629	61,978	54,930
Consisting of—							
Departments, Lobbies, or W.C.'s,							
with insufficient light or ventila-							
tion, or otherwise defective in							
construction, ...	8	1	7	—	9	25	66
Defective Chimneys causing nuis-							
ance, ...	171	113	115	31	181	611	593
Repair or dampness in Dwell-							
ing-houses, ...	1,455	1,029	2,526	639	2,685	8,334	7,494
Offensive smells from Drains, or							
other reasonable grounds—							
Smoke test, ...	182	209	130	110	27	658	588
Rains, Conductors, Soil-pipes,							
or Rhones choked or defective,	3,639	4,696	5,154	3,041	5,545	22,075	21,939
Sanitary Fittings choked or							
defective, ...	1,060	713	1,170	388	2,202	5,533	5,660
City Houses and Bedding, ...	179	688	944	319	183	2,313	2,079
City Closets, Stairs, &c. (daily and							
bi-weekly cleaning), ...	591	764	1,308	162	2,375	5,200	4,764
Rooms overcrowded, ...	—	3	1	—	—	4	5
Walls of Closets, Staircases,							
Lobbies, W.C.'s, and external							
walls of Houses, filthy (lime-							
washing), ...	1,304	1,853	1,820	954	764	6,695	7,919
Animals or Poultry kept so as to							
be a nuisance, ...	—	1	12	4	15	32	20
Accumulations of Garbage or							
Rubbish, ...	624	180	469	161	528	1,962	1,600
Wells from Decaying Animal							
Matter or other cause, ...	27	11	11	6	6	61	89
Stagnant Water, ...	11	3	6	6	77	103	95
Buildings infested with Rats or							
other vermin, ...	22	83	63	22	68	258	235
Accommodation and Water							
Supply required, ...	2	—	1	1	—	4	6
Water-Closet accommodation							
required, ...	13	4	11	5	4	37	48
Water Storage Cisterns dirty,							
uncovered, or unventilated, ...	100	237	445	535	29	1,346	987
Water Supply Pipes defective—							
tenants without water, ...	174	87	237	39	291	828	743

TABLE XXIII.—*Continued.*OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1932.	1931
Pit Shaft without adequate protection, ...	—	—	—	—	—	—	—
Reports to Gas Manager, ...	5	6	3	—	—	14	1
„ Master of Works, ...	407	325	516	307	1,304	2,859	—
„ Superintendent of Cleansing, ...	5	7	41	5	208	266	10
„ Water Engineer, ...	617	315	451	249	1,128	2,760	2,81
Prosecutions—Sheriff Court, ...	—	—	—	—	—	—	—
„ Police Court, ...	8	—	6	—	8	22	—
Number Successful, ...	8	—	6	—	8	22	—
Amount of Fines, ...	£1 5/6	—	£2 5/-	—	£2 14/-	£6 4/6	£21/5
Number of Rotation Cards for Cleansing of Common Stairs, Lobbies, and W.C.'s served on Tenants, ...	3,875	1,497	1,715	727	1,916	9,730	7,10
1. (b) Drain Testing.							
Number of Applications for satisfaction of Dean of Guild Court, ...	434	528	187	2,124	445	3,718	4,15
Number of first Applications to old Tenements or Systems, ...	200	208	141	170	36	755	63
Number of these found more or less defective, ...	173	205	127	159	28	692	57
Subsequent applications to old Tenements or Systems, ...	227	296	130	104	48	805	66
2. Common Lodging Houses.							
Number measured and registered, ...	—	—	—	—	—	—	—
Total number now on register, ...	13	6	11	2	4	36	—
With accommodation for, ...	3,119	2,111	2,856	791	1,756	10,633	10,63
Number of inspections by day, ...	452	89	599	20	363	1,523	1,24
Number of inspections by night, ...	34	17	10	6	1	68	—
Number of irregularities, ...	55	4	23	1	95	178	13
Number of prosecutions, ...	—	—	—	—	—	—	—
3. Boarding Houses for Emigrants and Seamen.							
Number measured and registered, ...	—	—	—	—	—	—	—
Total number now on register, ...	9	—	—	—	1	10	1
With accommodation for, ...	433	—	—	—	53	486	48
Number of inspections by day, ...	295	—	19	—	39	353	47
Number of inspections by night, ...	22	—	—	—	—	22	—
Number of irregularities, ...	—	—	—	—	—	—	—
Number of prosecutions, ...	—	—	—	—	—	—	—

TABLE XXIII.—*Continued.*
 OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1932.	1931.
Houses-Let-in-Lodgings.							
Number measured and registered,	—	1	—	—	3	4	3
Total number now on register, ...	10	18	—	13	15	56	61
Number of inspections by day, ...	88	105	20	28	98	339	291
Number of inspections by night,	25	20	—	—	13	58	78
Number of irregularities, ...	—	4	—	—	—	4	3
Number of prosecutions, ...	—	—	—	—	—	—	—
5. Farmed-out Houses.							
Number measured and registered,	—	—	—	—	—	—	11
Total number now on register, ...	454	24	103	—	12	593	629
Number of visits by day, ...	5,875	107	2,290	—	171	8,443	6,926
Number of inspections by night,	1,515	115	93	—	—	1,723	2,035
Number of irregularities, ...	981	—	161	—	—	1,142	739
Number of prosecutions, ...	2	—	—	—	—	2	—
6. Ticketed Houses.							
Number ticketed for first time, ...	—	—	—	—	—	—	—
Total number now on register, ...	2,231	4,889	2,740	1,679	1,134	12,673	13,088
Number of visits by day, ...	20	—	1,335	—	432	1,787	1,517
Number of inspections by night,	6,923	13,821	2,617	3,480	2,519	29,360	27,115
Number of cases of Overcrowding found and warned, ...	812	2,303	380	259	211	3,965	3,332
Number of prosecutions, ...	—	—	—	—	—	—	—
Cubic feet of space in worst cases of Overcrowding, instead of 400, only, ...	145, 163, 175	150, 166, 184	129, 142, 155	180, 184	185, 187, 200	—	—
Number of cases of Overcrowding in houses under 900 cubic feet of space, ...	19	33	6	15	3	76	51
7. Tents and Vans.							
Number of inspections, ...	464	142	423	265	373	1,667	888
Number of irregularities, ...	—	—	13	—	—	13	14
Number of prosecutions, ...	—	—	—	—	—	—	11
8. Workshops and Workplaces (excluding Bakehouses).							
Number measured and registered,	239	26	24	29	27	345	221
Total number now on register, ...	1,643	510	435	496	452	3,536	3,460
Number of inspections, ...	9,790	1,175	3,796	1,433	1,735	17,929	16,914
Number found dirty, ...	121	38	61	27	59	306	302
Number found Overcrowded, ...	—	—	—	—	—	—	1
Number found defective in light ventilation, ...	21	—	—	—	1	22	11
Number found with inadequate defective W.C. or sink accommodation, ...	5	—	4	14	3	26	21
Number of other nuisances, ...	207	7	43	7	12	276	299
Number of prosecutions, ...	—	—	—	—	—	—	1

TABLE XXIII.—*Continued.*
OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1932.	1931.
9. Bakehouses.							
Registered during year, ...	18	10	10	10	9	57	2
Total number now on register, ...	106	85	102	116	63	472	49
Number of inspections, ...	579	278	828	456	289	2,430	2,22
Number found dirty, ...	43	50	30	4	30	157	15
Number of other nuisances, ...	38	4	26	1	23	92	7
Number of prosecutions, ...	—	—	—	—	—	—	—
10. Homeworkers' Dwellings.							
Total number now on register, ...	48	49	60	59	34	250	26
Number of inspections, ...	101	103	280	231	36	751	63
Number found dirty, ...	—	—	—	—	—	—	—
11. Piggeries.							
Total number now on register, ...	7	24	8	1	6	46	—
Number of inspections, ...	42	77	61	7	26	213	2
Number found dirty, ...	3	18	6	1	—	28	—
Number of other nuisances, ...	1	—	2	—	—	3	—
Number of prosecutions, ...	—	—	—	—	—	—	—
12. Offensive Trades.							
Total number now on register, ...	3	14	44	—	9	70	—
Number of inspections, ...	33	68	996	—	67	1,164	1,1
Number of irregularities, ...	—	—	57	—	3	60	—
Number of prosecutions, ...	—	—	—	—	—	—	—
13. Rag Flock Act, 1911.							
Total number of visits, ...	—	3	8	—	44	55	—
Samples submitted for analysis, ...	—	—	2	—	9	11	—
Certified not to conform to standard, ...	—	—	—	—	—	—	—
Number of prosecutions, ...	—	—	—	—	—	—	—
Number of convictions, ...	—	—	—	—	—	—	—
14. Broker's Premises.							
Total number of visits, ...	20	21	275	13	8	337	2
15. Infectious Diseases.							
Total number of visits, ...	23,128	23,976	20,623	17,497	15,183	100,407	109,8

TABLE XXIII.—*Continued.*OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
16. Housing Acts.						1932.	1931.
Number of visits, ...	4,554	2,893	3,600	3,131	859	15,037	15,747
Work of Female Inspectors.							
Under the Glasgow Corporation (Police) Order, 1904—							
Vermineous Children.							
Number of visits to schools, ...	208	337	439	219	342	1,545	1,874
Number of children submitted for inspection, ...	3,455	4,090	9,098	3,029	6,609	26,281	34,684
Number of children found infested, ...	27	49	71	267	158	572	820
Number of children found infested, ...	528	1,030	1,522	1	876	3,957	3,685
Number of children found with fleas, ...	104	235	114	67	28	548	562
Number of children found dirty, ...	73	342	374	118	47	954	1,285
Number of written notices, ...	27	49	71	453	210	810	1,384
Number of children cleaned by Guardians, ...	526	1,561	1,436	365	1,047	4,935	5,975
Number of children cleaned by officers, ...	—	—	—	—	—	—	8
Homes of Vermineous Children.							
Number of houses inspected, ...	1,096	1,364	1,409	330	1,312	5,511	6,302
Number of houses in which lodgers were found, ...	16	16	8	4	113	157	185
Number of houses found dirty, ...	4	51	139	60	9	263	197
Number of houses with dirty bedding, ...	6	33	113	59	7	218	191
Number of written notices, ...	—	1	131	2	4	138	59
Number of re-inspections, ...	12	148	466	132	14	772	551
Number of houses found cleaned, ...	6	45	131	57	10	249	184
Number of bedding found cleaned, ...	7	26	110	55	7	205	184

TABLE XXIII.—*Continued.*OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
(c) House-to-House Visitation.						1932.	1931.
Number of houses visited, ...	22,232	10,218	5,784	4,439	9,229	51,902	57,661
Number of houses in which lodgers were found, ...	1,298	540	171	306	751	3,066	3,611
Number of houses found dirty, ...	104	378	283	76	38	879	811
Number of houses with dirty bedding, ...	45	75	50	62	17	249	311
Number of houses—Written notices, ...	11	9	107	5	14	146	111
Number of houses—Re-visits, ...	283	1,030	344	180	61	1,898	2,111
Number of houses found cleaned, ...	107	365	277	77	42	868	811
Number of houses—Bedding found cleaned, ...	52	69	52	61	20	254	311
(d) Re-housing Scheme Visitation.							
Number of houses visited, ...	1,674	14,629	13,046	5,373	895	35,617	34,411
Number of houses in which lodgers were found, ...	174	1,165	89	7	1	1,436	711
Number of houses found clean, ...	1,528	10,061	8,451	4,993	875	25,908	24,211
Number of houses found fair, ...	137	4,247	3,893	274	20	8,571	8,911
Number of houses found unsatisfactory, ...	4	308	647	70	—	1,029	1,211
Number of houses found dirty, ...	5	13	55	36	—	109	111
Number of houses with dirty bedding, ...	—	9	5	17	—	31	111
Number of written notices, ...	1	2	63	3	—	69	111
Number of re-visits, ...	4	674	744	186	—	1,608	1,811
Number of houses found cleaned, ...	3	316	668	80	—	1,067	1,211
Number of bedding found cleaned, ...	—	13	67	20	—	100	111
(e) Other Work.							
Number of nuisances reported by Female Inspectors, ...	7	30	959	161	36	1,193	811
Number of infectious disease cases reported by Female Inspectors, ...	—	5	27	24	1	57	111

TABLE XXIV.—GLASGOW.—POPULATION ; BIRTHS AND DEATHS ; BIRTH-RATES AND DEATH-RATES PER 1,000 ; ALSO DEATHS UNDER 1 YEAR, AND DEATH-RATES PER 1,000 BIRTHS SINCE 1860.

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1860†	389,843	15,943	12,436	40·8	31·9	2,905	182
1861	397,673	16,537	10,936	41·6	27·5	2,544	154
1862	405,789	16,400	11,565	40·4	28·5	2,562	156
1863	413,944	16,986	13,329	41·0	32·2	2,774	163
1864	420,738	17,411	13,674	41·4	32·5	3,051	175
1865	428,123	17,956	13,914	41·9	32·5	3,097	173
1866	437,850	18,288	12,829	41·8	29·3	2,905	159
1867	446,028	18,347	12,578	41·1	28·2	2,895	158
1868	455,000	18,607	13,832	40·9	30·4	3,127	168
1869	464,332	18,495	15,648	39·8	33·7	3,411	184
1870	471,453	19,355	13,955	41·1	29·6	2,991	155
1871	491,900	18,867	15,790	38·4	32·1	3,608	191
1872	494,824	20,158	14,053	40·7	28·4	3,198	159
1873	494,847	19,487	14,499	39·4	29·3	3,255	167
1874	498,270	20,039	15,845	40·2	31·8	3,240	162
1875	499,480	20,825	15,384	41·7	30·8	3,388	163
1876	502,299	20,981	13,763	41·7	27·4	3,166	151
1877	504,487	21,124	13,823	41·9	27·4	3,106	147
1878	507,420	20,622	14,157	40·6	27·9	3,285	159
1879	508,048	19,751	12,498	38·8	24·6	2,504	127
1880	509,732	18,912	13,304	37·1	26·1	2,842	150
1881	512,034	19,106	12,916	37·3	25·2	2,745	144
1882	517,904	19,735	13,046	38·1	25·2	2,959	150
1883	523,154	19,911	14,577	38·1	27·9	3,091	155
1884	528,459	20,557	13,942	38·9	26·4	3,094	151
1885	533,817	19,861	13,492	37·2	25·3	3,100	156
1886	539,231	19,862	13,104	36·8	24·3	2,786	140
1887	544,700	19,328	12,135	35·5	22·3	2,676	138
1888	550,226	19,309	11,681	35·1	21·2	2,560	133
1889	555,808	19,503	13,139	35·1	23·6	3,008	154
1890	561,447	19,279	13,374	34·3	23·8	2,880	149
1891	567,143	19,857	14,324	35·0	25·3	2,946	148
1892	669,059*	22,815	15,218	34·1	22·7	3,168	139
1893	677,883	23,173	15,798	34·2	23·3	3,649	157
1894	686,820	22,644	13,673	34·0	19·9	2,937	130
1895	695,876	22,803	16,344	32·8	23·5	3,538	155
1896	705,052	24,029	14,385	34·1	20·4	3,278	136
1897	714,919	23,880	15,727	33·4	22·0	3,826	160
1898	724,349	24,262	15,333	33·5	21·2	3,792	156
1899	733,903	24,249	15,828	33·0	21·6	3,696	152
1900	743,969	24,362	16,393	32·7	22·0	3,778	153
1901	761,925	24,206	16,197	31·8	21·2	3,607	149
1902	762,789	24,722	15,532	32·4	20·4	3,206	129

* Extended City.

† For earlier years, see Report for 1910, Table liii.

TABLE XXIV.—*Continued.*

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Yea	
						Number.	Rate per 1,00 Births.
1903	763,654	25,135	15,073	32·9	19·7	3,663	146
1904	764,521	24,754	15,414	32·4	20·2	3,606	146
1905	765,389	24,316	14,460	31·8	18·9	3,195	131
1906	780,192*	24,560	14,889	31·5	19·1	3,223	131
1907	781,080	24,006	15,659	30·7	20·0	3,116	130
1908	781,969	23,915	15,265	30·6	19·5	3,284	137
1909	782,860	23,140	15,242	29·6	19·5	3,073	133
1910	783,785	22,222	13,395	28·4	17·1	2,694	121
1911	784,680	21,755	13,899	27·7	17·7	3,016	139
1912	785,600	22,044	13,797	28·1	17·6	2,740	124
1913†	1,021,789*	28,688	17,693	28·1	17·3	3,706	129
1914	1,028,440	29,462	17,522	28·6	17·0	3,913	133
1915	1,035,091	27,943	20,159	27·0	19·5	4,007	143
1916	1,041,742	27,094	16,601	26·0	15·9	2,996	111
1917	1,048,393	24,030	16,691	22·9	15·9	3,089	129
1918	1,055,044	23,524	18,362	22·3	17·4	2,660	113
1919	1,061,695	25,835	18,237	24·3	17·2	2,937	114
1920	1,068,346	32,626	16,765	31·5	15·7	3,477	107
1921	1,075,000	29,712	15,625	27·6	14·5	3,138	106
1922	1,074,607	28,298	17,850	26·3	16·6	3,401	120
1923	1,074,215	26,710	14,875	24·9	13·8	2,388	89
1924	1,073,822	25,330	16,868	23·6	15·7	3,005	119
1925	1,073,429	25,416	15,336	23·7	14·3	2,591	102
1926	1,090,380*	24,541	15,731	22·7	14·6	2,548	104
1927	1,089,988	23,578	15,439	21·6	14·2	2,527	107
1928	1,089,595	23,649	15,701	21·7	14·4	2,525	107
1929	1,089,202	22,799	17,760	20·9	16·3	2,438	107
1930	1,088,810	23,322	15,455	21·4	14·2	2,355	101
1931	1,088,461	22,926	15,505	21·1	14·2	2,397	105
1932	1,095,263	22,732	16,071	20·8	14·7	2,542	112

* Extended City.

† Births and Deaths from 1913 are corrected for transfer

PART II

FEVER AND TUBERCULOSIS
HOSPITALS AND SANATORIA

ANNUAL REPORTS

FOR THE YEAR

1932

PART II

FEVER AND TUBERCULOSIS HOSPITALS.

The number of beds available for fever purposes, 1,454, is unaltered. The accommodation in the various hospitals and the number per thousand of the population are given in Table XX of the Appendix. The second portion of the table shows the beds for tuberculosis patients which have been provided in Corporation hospitals and sanatoria, along with the beds occupied in other hospitals and sanatoria for which payment is made. Information with respect to expenditure, number of patients treated, duration of residence, and average cost is given in Appendix Table XXI for the financial year ending 31st May, 1932. In the following pages are also included data showing the age and sex distribution of patients treated for the various diseases dealt with during the year. Altogether, 7,807 male patients and 8,283 female patients were treated, a total of 16,090, as compared with 16,131 during the previous year. The deaths numbered 688 males and 554 females, representing mortality rates of 8·8 and 6·7 per cent. respectively of the total dismissals.

Two of the wooden pavilions at Belvidere Hospital were not put into commission during the year, when it was found unnecessary and unadvisable to reopen them.

The high prevalence of scarlet fever during the year caused the accommodation to be used to the utmost extent possible. This was, however, associated with new administrative arrangements whereby a considerably larger number of scarlet fever patients than has been customary were permitted to be treated at home where the circumstances were suitable. The hospitals had also to cope with a high incidence of respiratory diseases in the first quarter of the year, particularly in the month of

December, when there was an outbreak of influenza with influenzal pneumonia. Here also judicious selection of patients for admission was exercised.

The reports of the Medical Superintendents which follow cover the routine work of the fever and tuberculosis hospitals, and give the results of such special measures of treatment as were adopted, along with results of research undertaken or still proceeding. It may be observed that the hospitals are co-operating in a comprehensive investigation into pneumonia. Special reference is also made to the treatment of scarlet fever by serum, the features of puerperal fever, the orthopædic treatment of non-pulmonary tuberculosis and other crippling deformities, and other matters. The report on Mearns Kirk Hospital is the first dealing with the work of the entire institution over a full twelve months' period.

During the year the use of 15 beds at Lanfine Home, 10 beds at Strathblane, and a proportion of those available to the Corporation at Bridge of Weir and Ochil Hills Sanatorium was discontinued, while some 20-30 beds were made available for adult female patients in Mearns Kirk Sanatorium.

EAR, THROAT, AND NOSE DISEASES.

The following statement summarises the visits made to hospitals by the two specialists. Further details will be found in the various hospital reports:—

RECORD OF ATTENDANCES AND OPERATIONS BY AURISTS AT CORPORATION HOSPITALS FOR THE YEAR 1932.

	Patients.						Staff.		
	New Cases.		Old Cases.		Operations.		New Cases.	Old Cases.	Operations.
	Age—5	+5	—5	+5	—5	+5			
Belvidere, ...	37	75	43	46	12	15	9	3	—
Ruchill, ...	147	184	71	86	26	47	9	4	—
Knightswood, ...	19	38	1	2	15	30	—	—	—
Shieldhall, ...	22	34	43	62	11	5	1	—	—
Robroyston, ...	—	3	—	2	—	3	1	1	1
Total, ...	225	334	158	198	64	100	20	8	1

GLASGOW.—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF CASES

		Age.	Enteric Fever.	Paratyphoid Fever.	Puerperal Fever.	Scarlet Fever.	Diph. and Mem. Group.	Erysipelas.	Cerebro-spinal Fever	Continued Fever.	Typhus Fever.	Mothers with Babies.	Poliomyelitis.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Malaria.
Cases (including Deaths)—																
Males,	...	1	—	1	—	23	28	10	29	—	—	—	—	197	2	
"	...	2	—	—	—	110	51	6	9	—	—	—	—	234	2	
"	...	3	—	—	—	229	80	—	5	—	—	—	—	117	1	
"	...	4	2	—	—	270	72	1	3	—	—	—	—	60	2	
"	...	5	—	—	—	304	87	4	2	—	—	—	—	52	—	
"	...	10	4	2	—	1,277	390	11	5	—	—	—	—	246	9	
"	...	15	3	1	—	530	124	5	3	—	—	—	—	110	7	
"	...	25	7	3	—	253	68	14	7	—	—	—	—	222	27	
"	...	35	3	—	—	105	21	42	5	—	—	—	—	140	22	
"	...	45	2	—	—	38	11	37	1	—	—	—	—	122	17	
"	...	45+	2	—	—	14	3	115	6	—	—	—	—	159	23	
Total,			23	7	—	3,153	935	245	75	—	—	—	—	1,659	112	
Females,	...	1	—	—	—	21	13	13	19	—	—	—	—	161	2	
"	...	2	1	—	—	124	34	7	8	—	—	—	—	174	2	
"	...	3	—	—	—	215	62	1	6	—	—	—	—	95	1	
"	...	4	2	—	—	269	80	2	2	—	—	—	—	65	—	
"	...	5	1	—	—	336	103	2	1	—	—	—	—	39	2	
"	...	10	6	1	—	1,632	458	7	6	—	—	—	1	125	5	
"	...	15	2	2	1	752	190	3	5	—	—	—	—	51	4	
"	...	25	6	4	43	472	149	33	6	—	—	—	—	69	10	
"	...	35	5	6	66	192	51	51	2	—	—	—	—	46	9	
"	...	45	5	1	20	70	18	47	—	—	—	—	—	35	4	
"	...	45+	1	1	1	29	10	123	1	—	—	—	—	66	11	
Total,			29	15	131	4,112	1,168	289	56	—	—	—	1	926	50	
Deaths—																
Males,	...	1	—	—	—	1	6	6	26	—	—	—	—	64	1	
"	...	2	—	—	—	2	12	1	3	—	—	—	—	56	—	
"	...	3	—	—	—	4	8	—	—	—	—	—	—	12	—	
"	...	4	1	—	—	5	5	—	3	—	—	—	—	4	—	
"	...	5	—	—	—	2	6	—	1	—	—	—	—	4	—	
"	...	10	—	—	—	9	14	—	2	—	—	—	—	6	—	
"	...	15	—	—	—	2	4	—	1	—	—	—	—	8	1	
"	...	25	—	—	—	1	1	—	3	—	—	—	—	30	6	
"	...	35	—	—	—	3	1	—	2	—	—	—	—	22	2	
"	...	45	1	—	—	2	—	3	1	—	—	—	—	33	8	
"	...	45+	—	—	—	2	1	12	6	—	—	—	—	62	11	
Total,			2	—	—	33	58	22	48	—	—	—	—	301	29	
Females,	...	1	—	—	—	5	3	8	15	—	—	—	—	55	—	
"	...	2	—	—	—	9	3	—	5	—	—	—	—	36	1	
"	...	3	—	—	—	7	4	—	2	—	—	—	—	12	—	
"	...	4	—	—	—	7	6	—	1	—	—	—	—	5	—	
"	...	5	—	—	—	4	8	—	1	—	—	—	—	3	—	
"	...	10	—	—	—	7	21	—	3	—	—	—	—	5	1	
"	...	15	—	—	—	8	5	—	2	—	—	—	—	2	—	
"	...	25	—	1	8	4	1	2	4	—	—	—	—	3	1	
"	...	35	2	—	7	3	—	1	—	—	—	—	—	14	1	
"	...	45	3	—	1	—	—	—	—	—	—	—	—	13	2	
"	...	45+	—	—	—	1	—	18	1	—	—	—	—	25	5	
Total,			5	1	16	55	51	29	34	—	—	—	—	173	11	

DISMISSED FROM FEVER HOSPITALS, AND DEATHS DURING THE YEAR 1932.

Dysentery.	Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Measles.	German Measles.	Whooping-cough.	Chickenpox.	Mumps.	Influenza.	Veneral Diseases.	Babies with Mothers.	No apparent Disease.	Impetigo.	Others.	Enc. Lethargica.	Anthrax.	Beri-beri.	Unclassified.	Puerperal Pyrexia.	TOTALS.
4	—	1	101	1	18	11	—	—	—	—	5	—	71	—	—	—	—	—	502
6	—	5	143	1	42	11	1	—	—	—	4	—	60	—	—	—	—	—	685
5	—	1	94	5	14	6	1	1	—	—	1	—	45	—	—	—	—	—	605
4	—	2	56	4	14	4	—	—	—	—	1	—	38	—	—	—	—	—	533
4	—	5	24	3	5	7	1	—	—	—	2	—	28	—	—	—	—	—	528
5	1	6	43	14	6	18	—	3	—	—	13	—	79	2	—	—	—	—	2,134
6	2	6	—	4	—	2	1	2	—	—	5	—	39	1	—	—	—	—	851
2	5	7	5	2	—	1	1	4	47	—	—	—	45	1	—	—	—	—	721
3	4	—	2	—	—	2	—	1	97	—	4	—	28	—	—	—	—	—	479
6	4	1	—	—	—	1	—	4	40	—	—	—	32	—	—	—	—	—	317
5	4	—	—	—	—	—	—	1	58	—	—	—	62	—	—	—	—	—	452
0	20	34	468	34	99	63	5	16	242	—	35	—	527	4	—	—	—	—	7,807
4	—	—	88	—	28	8	—	1	—	4	2	—	48	—	—	—	—	—	412
1	—	1	154	4	36	11	—	—	—	—	4	1	66	—	—	—	—	—	638
3	1	2	74	4	33	11	1	—	—	—	1	—	32	—	—	—	—	—	542
5	—	2	62	2	10	4	—	—	—	—	1	—	27	—	—	—	—	—	533
4	—	1	38	4	11	3	2	—	—	—	1	1	13	—	—	—	—	—	562
9	1	10	50	10	21	26	—	1	—	—	10	1	73	—	—	—	—	—	2,453
1	—	4	6	6	—	2	1	2	—	—	8	1	41	—	—	—	—	—	1,082
1	4	11	46	16	—	5	6	12	—	—	6	—	83	—	—	—	15	4	1,001
2	2	—	23	3	—	—	2	5	—	—	1	—	61	—	—	—	1	2	530
—	2	—	2	—	—	—	—	2	—	—	3	—	29	—	—	—	—	—	238
4	2	—	1	—	—	—	—	3	—	—	—	—	37	—	—	—	2	—	292
4	12	31	544	49	139	70	12	26	—	4	37	4	510	—	—	—	18	6	8,283
2	—	1	31	—	7	1	—	—	—	—	—	—	14	—	—	—	—	—	160
—	—	4	29	—	17	—	—	—	—	—	—	—	6	—	—	—	—	—	130
—	—	1	8	—	5	—	—	1	—	—	—	—	1	—	—	—	—	—	40
—	—	2	2	—	2	—	—	—	—	—	—	—	3	—	—	—	—	—	27
—	—	5	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	20
—	—	5	1	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	40
—	1	6	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	25
—	1	7	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	51
—	—	—	—	—	—	—	—	—	1	—	—	—	2	—	—	—	—	—	33
1	3	1	—	—	—	—	—	—	—	—	—	—	5	—	—	—	—	—	58
1	1	—	—	—	—	—	—	—	2	—	—	—	6	—	—	—	—	—	104
4	6	32	71	—	31	1	—	1	3	—	—	—	46	—	—	—	—	—	688
—	—	—	21	—	10	—	—	1	—	—	—	—	6	—	—	—	—	—	124
1	—	1	32	—	11	1	—	—	—	—	—	—	5	—	—	—	—	—	105
—	—	2	8	—	9	—	—	—	—	—	—	—	1	—	—	—	—	—	45
—	—	2	4	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	28
1	—	1	3	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	22
—	1	9	5	—	1	—	—	—	—	—	—	—	5	—	—	—	—	—	58
—	—	4	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	22
—	—	10	1	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	42
—	1	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	31
—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	21
—	—	—	—	—	—	—	—	—	—	—	—	—	6	—	—	—	—	—	56
2	2	29	74	—	35	1	—	1	—	—	—	—	35	—	—	—	—	—	554

GLASGOW.—TABLE SHOWING ALTERATIONS IN DIAGNOSIS
ORIGINALLY CERTIFIED AS

	Typhus Fever.	Enteric Fever.	Continued and Undefined Fever.	Puerperal Fever.	Scarlet Fever.	Scarlet Fever and Other Diseases.	Diphtheria.	Diphtheria and Other Diseases.	Erysipelas.	Cerebro-spinal Fever	Cerebro-spinal Fever and Other Diseases.	Poliomyelitis.
Puerperal Fever and Other Diseases, ...	—	—	—	1	—	—	—	—	—	—	—	—
Enteric Fever, ...	—	—	3	—	2	—	—	—	—	—	—	—
Puerperal Fever, ...	—	—	1	—	—	—	—	—	—	—	—	—
Scarlet Fever, ...	—	—	1	—	—	23	18	—	1	5	—	—
Scarlet Fever and Other Diseases, ...	—	—	—	—	30	—	2	1	—	1	—	—
Diphtheria, ...	—	—	—	—	4	—	—	4	—	—	—	—
Diphtheria and Other Diseases, ...	—	—	—	—	1	—	29	—	—	—	—	—
Cerebro-spinal Fever, ...	—	1	1	—	—	—	—	—	—	—	—	—
Dysentery, ...	—	1	—	—	1	—	2	—	—	1	—	—
Poliomyelitis, ...	—	—	—	—	—	—	—	—	—	1	—	—
Pneumonia, ...	—	2	6	—	6	—	18	—	—	39	2	—
Pneumonia and Other Diseases, ...	—	—	—	—	—	—	1	—	—	—	—	—
Erysipelas, ...	—	—	—	—	1	—	—	—	—	1	—	—
Tuberculosis (all forms), ...	—	4	2	—	1	—	—	—	—	54	1	—
Measles, ...	—	—	—	—	17	—	4	—	1	1	—	—
Measles and Other Diseases, ...	—	—	—	—	—	—	—	—	—	—	—	—
Roseola, ...	—	—	—	—	19	2	—	—	—	—	—	—
Whooping-cough, ...	—	—	—	—	1	—	—	—	—	—	—	—
Diabetes, ...	—	—	—	—	—	—	—	—	—	—	—	—
Chickenpox, ...	—	—	—	—	—	—	—	—	—	—	—	—
Chickenpox and Other Diseases, ...	—	—	—	—	—	—	—	—	—	—	—	—
Influenza, ...	—	1	1	—	6	—	—	—	1	9	—	—
Other Diseases of the Nervous System, ...	—	—	—	—	1	—	4	—	2	23	1	2
Other Diseases of the Respiratory System, ...	—	—	1	—	3	—	33	—	—	4	—	—
Diseases of the Circulatory System, ...	—	—	1	—	3	—	—	—	3	—	—	—
Diseases of the Digestive System, ...	—	19	3	—	92	3	127	4	3	16	1	—
Other Accidents and Diseases of Pregnancy and Parturition, ...	—	—	—	9	—	—	—	—	—	—	—	—
Diseases of the Skin and of the Cellular Tissue, ...	—	—	1	—	16	—	1	—	32	1	—	—
No apparent Disease, ...	—	2	—	—	33	—	5	—	1	1	—	1
All other Diseases, ...	—	7	8	—	16	—	3	—	7	3	—	1
Erysipelas and Other Diseases, ...	—	—	—	—	—	—	—	—	3	—	—	—
Encephalitis Lethargica, ...	—	—	—	—	—	—	—	—	—	1	—	—
Whooping-cough and Other Diseases, ...	—	—	—	—	—	—	—	—	—	—	—	—
Paratyphoid B., ...	—	—	—	—	—	—	—	—	—	2	—	—
Mumps, ...	—	—	—	—	—	—	1	—	—	—	—	—
Bronchitis, ...	—	2	3	—	5	1	10	1	—	6	—	—
Acute and Chronic Nephritis, ...	—	—	—	—	2	—	—	—	2	4	—	—
Cancer, ...	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Pyrexia, ...	—	—	—	—	—	—	—	—	—	—	—	—
Impetigo, ...	—	—	—	—	2	—	—	—	1	—	—	—
Influenzal Pneumonia, ...	—	—	—	—	—	—	1	—	—	—	—	—
	—	39	32	10	262	31	259	10	57	173	5	4

CASES DISMISSED AND DEATHS DURING 1932.

ORIGINALLY CERTIFIED AS

Pneumonia.	Influenza Pneumonia.	Dysentery.	Malaria.	Measles.	Measles and Other Diseases.	Anthrax.	German Measles.	Whooping-cough.	Whooping-cough and Other Diseases.	Chickenpox.	Infective Jaundice.	Other Diseases.	Paratyphoid B.	Puerperal Pyrexia.	Encephalitis Lethargica.	Erysipelas and Other Diseases.	Malaria and Other Diseases.	Enteric and Other Diseases.	Chickenpox and Other Diseases.	Puerperal Fever and Other Diseases.
—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—
2	—	—	—	6	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—
3	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	1	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	1	2	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—
0	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0	—	—	—	—	7	—	1	—	—	—	—	—	—	1	3	—	—	—	—	—
—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	—	—	—	35	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
6	1	—	—	1	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—
1	2	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	5	14	—	3	—	—	—	—	—	—	1	—	2	—	—	—	—	1	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	2	—	1	1	—	—	3	—	—	—	—	—	—	—	—	—	—
1	1	3	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	1	—	—	1	—	—	—	—	—	—	—	—	2	—	1	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
2	17	—	—	4	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
33	17	1	65	8	1	4	7	1	7	1	—	4	9	12	—	—	1	—	1	—

RECEPTION HOUSES.

The accommodation at Baird Street Reception House was utilised wholly during the year for the treatment of cases of ophthalmia neonatorum and artificial light therapy of tuberculosis. The former is dealt with in Section III of the report, and the latter under "Tuberculosis."

The arrangement whereby the rear annexe of Moffat Street Reception House had been utilised for the isolation of young children prior to admission to the various country homes was stopped as from 22nd June. The accommodation at this reception house continues to be devoted to the housing and supervision of various contacts and other persons who require to be accommodated for disinfection, &c. Cases of scabies to the number of 34, and 10 verminous persons were treated during the past year.

CONTACTS, &C., ADMITTED TO MOFFAT STREET RECEPTION HOUSE.

	1932.			1931. Total.
	Adults.	Children.	Total.	
Typhus Fever, ...	—	—	—	10
Scarlet Fever, ...	1	10	11	7
Diphtheria, ...	—	6	6	5
Whooping-cough, ...	—	3	3	5
Diphtheria carriers, ...	—	8	8	—
Conjunctivitis and Adenitis, ...	—	1	1	—
Impetigo, ...	1	9	10	8
Verminous Persons, ...	7	3	10	21
Scabies, ...	13	21	34	46
For Observation before admission to Country Homes, ...	—	103	103	185
Enteric Fever carrier, ...	1	—	1	—
Papulæ Urticaria, ...	—	1	1	—
House being fumigated, ...	1	—	1	—
Infant (Mother, puerperal fever),	—	1	1	—
Cow Pox, ...	1	—	1	—
Rash, ...	1	—	1	—
Bug infestation, ...	—	—	—	15
Total, ...	26	166	192	302

BELVIDERE FEVER HOSPITAL.

For the last three years the admissions to hospital have been above the average, but the figure for 1932, 6,243, was 303 less than that for 1931. On 1st January there remained in hospital 719 patients. During the year 6,326 patients were treated to a conclusion, and 636 were still in hospital on 31st December, 1932. The deaths numbered 432, equivalent to a general

mortality rate of 6·8 per cent. This is the lowest rate recorded for many years, and is attributable to the high proportion of scarlet fever admissions, among which the death rate was low. Of the 432 fatal cases, 113 were admitted moribund and died within 48 hours. No less than 48 per cent. of the total admissions were due to scarlet fever. Excluding these, the death-rate was 12 per cent.

The average duration of residence of patients discharged well was 37 days; in fatal cases 12 days. The daily average number of patients in hospital throughout the year was 598. The busiest month was January, when the daily average was 733. The following are the monthly figures for the year:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
733	719	696	655	630	610	513	448	436	511	574	645
716			635			466			577		

Scarlet Fever was again exceedingly prevalent, and, although some restriction was put on the admissions, no less than 3,015 patients were treated. The figure for 1931 was 2,298, for 1930 it was 1,967, and for 1929, 1,429. The *Diphtheria* cases dismissed numbered 952, a small excess over the previous year, but not above normal prevalence. *Pneumonia* showed a slight reduction on the two previous years' figures. There were 1,031 cases treated, almost 500 less than in 1929. The mortality rate was 19·6 per cent. *Measles*, which had been prevalent in 1931, markedly decreased, and there were only 244 cases under treatment. Forty deaths occurred (of whom 8 were moribund on admission) due to pneumonia or enteritis. Similarly, in *Whooping-cough* there was a marked decrease, only 23 cases being dismissed. These were all seriously ill on admission and 11 proved fatal. In the Enteric group there were 38 dismissals, all being female patients, 29 were due to B. Typhosus and 9 to Paratyphosus B. In all, 6 deaths occurred. 17 cases of *Bacillary Dysentery* were admitted, most of them children. *Cerebro-spinal Fever* occurred sporadically and was responsible for only 41 dismissals, of which 23 died, the majority under 5 years of age. The dismissals for Chickenpox numbered 124, and were not so numerous as in 1931. There were 2 deaths from other complications.

The average days' residence of patients discharged was as follows:—Scarlet fever, 37; diphtheria, 42; enteric fever, 54; paratyphoid fever, 31; measles, 56; whooping-cough, 71; puerperal fever, 49; pneumonia, 32; chickenpox, 39; venereal diseases, 31.

Altered Diagnosis.—It was found necessary to revise the diagnosis in 594 cases. Among these were 127 erroneous certifications of scarlet fever, 165 of diphtheria, 149 of pneumonia, 66 of cerebro-spinal fever, and 27 of the enteric group.

Physical Condition of Patients.—Generally speaking, the physical condition of the patients admitted was good. The improvement noted during the last few years has been maintained, and the contrast with the physique of the hospital population of 20 years ago is very marked. The effect of better housing conditions is manifesting itself in the undoubted improvement in the general cleanliness of the children admitted. The incidence of verminous infestation was less, and skin affections were less numerous than usual.

The wooden pavilions, Wards 11 to 15 West, erected in 1900 in an emergency for smallpox, are now in need of extensive repair if they are to be retained. Their equipment is altogether inadequate for acute cases, and for the greater part of the year, with the exception of one pavilion utilised for chickenpox and another used as an overflow for scarlet fever, they have remained unoccupied. For reasons of economy, the Committee ordered that 2 of these 5 pavilions should be closed down, and the question of demolition might well be considered. Even if repaired, they would still be unsatisfactory wards, and the available accommodation in the nurses' home is insufficient to house the necessary staff to run them. Two of the pavilions might be repaired and retained for chickenpox and a third utilised as a store, but it does not appear that the remaining two are worth retaining.

Ward 27 East, the two-storey cubicle ward, has now been occupied for fully two years and must be regarded as a very valuable addition to the hospital. It has been fully occupied during the year. In practice there do not appear to be any disadvantages associated with the two-storey principle for a ward of this type. The general lay-out of the ward is admirably suited to the requirements, and the ventilation, lighting, and heating have proved satisfactory. As indicated in last year's report, the available isolation accommodation is still insufficient and on many occasions during the year the ward was very fully taxed. Beds were made available in this ward for operations by the Consulting Aurist, who made 201 visits to patients, and in 27 cases performed operations.

Scarlet Fever.—3,015 cases were treated to a conclusion. Never before in the history of the hospital has so high a figure been recorded. Throughout the year the west side of the hospital was fully occupied, and during the busier months six additional wards were made available on the east side. Many of the patients

were discharged early in the fifth week, but the disease was definitely of more severe type than has been noted during recent years and complications were numerous, so that it was not possible to materially reduce the daily average residence. 35 cases proved fatal, giving a mortality rate of 1.1 per cent., contrasted with 0.9 per cent. in 1931 and 0.8 per cent. in 1930. The increase in the number of severe cases necessitated the employment of serum on a large scale. Mild cases of the simple type did not receive it, but those who could not be classified in this category were serum treated if received sufficiently early. In septic and toxic cases the intravenous route was selected where possible and in some cases large doses of 40 or more c.c. were given. In spite of this procedure no less than 5 toxic and 7 septic cases proved fatal. Generally the response to serum was good, but, unfortunately, many of the cases were received too late to benefit. Careful observations showed that after the fourth day of the disease the response to serum diminished, and in this connection, during exceptional epidemic prevalence, when it is not always possible to hospitalize patients promptly, a plea may be put forward for serum administration at home. Dr. Alexander H. Imrie, one of the Resident Assistants, recently published some observations on the antitoxin treatment of scarlatina, and the following brief extract from his conclusions is noteworthy:—

“1. (a) Antitoxin has a beneficial effect on the initial toxæmia. It slightly reduces the duration of the rash and pyrexia and often induces a fine localized desquamation. (b) Antitoxin in the dosage given has no effect on well-established toxic scarlet fever. (c) It is of value in preventing complications if given early, i.e., before the fourth day of illness, and preferably on the first or second day. 2. (a) The route of administration has little influence on the initial toxæmia, duration of rash or duration of pyrexia, and very little influence on the duration of desquamation in cases which desquamate generally. Antitoxin given intravenously, however, induces, in a large proportion of cases, a very fine type of desquamation, frequently localized, and for these cases the period of desquamation is markedly reduced. (b) Intravenous antitoxin appears to reduce the incidence of complications more than intramuscular antitoxin. (c) Intravenous administration is often difficult in young children, may be dangerous, and is contra-indicated in the case of anyone who has previously had serum or who appears likely to be sensitive to it. (d) In the present series of 1,616 cases there were only six cases of endocarditis. These all occurred in the untreated group, and all gave a history of rheumatism.

General Conclusion.—Concentrated anti-scarlatinal serum given intramuscularly on the first or second day of illness is the

safest and most generally useful method of specific treatment in scarlet fever. Given thus it is safe, combats the toxæmia, and seems to lessen the risk of later complications."

Among the scarlet fever notifications 21 cases were found to be suffering coincidently from other infections, 15 from diphtheria, 5 from chickenpox, and 1 from whooping-cough. In addition, 28 cases were found to be in the incubation stage of other infections:—Incubating chickenpox, 14; incubating whooping cough, 7; incubating measles, 4; incubating rubella, 2; incubating paratyphoid B., 1.

Diphtheria.—952 confirmed cases were treated to a conclusion, a figure which corresponds to the usual prevalence. The disease was of relatively mild type, and the mortality rate, 5·3 per cent., was less than that of the previous year. 21 of the 50 fatal cases died within 48 hours of admission. Most of these were received too late for effective serum treatment, but in practically all cases the patients had been promptly sent to hospital as soon as seen by a medical man. In 165 patients notified as diphtheria the diagnosis was revised to some other condition, most usually sore throat of a simple nature. Among the confirmed cases treated, 21 were suffering coincidently from other infections:—Scarlet fever, 18; measles, 2; and whooping-cough, 1. In addition 16 cases were incubating other diseases:—Scarlet fever, 8; chickenpox, 6; measles, 1; rubella, 1.

In diphtheria, early serum administration is of great importance, as the mortality is negligible in cases so treated during the first and second day of the disease. Serum is available at the hospital for home administration but the number of practitioners who avail themselves of this facility is small. It would appear that some advantage might be obtained if, in those cases where it is deemed advisable to await the result of throat swabbing, a small dose of serum were given in the patient's home at the same time as the throat swab is procured.

Pneumonia.—1,031 cases of this disease were treated, a figure somewhat less than usual. There were 202 deaths. The mortality rate was 19·6 per cent. Since 1929 the disease has been studied in all its aspects in great detail and a large amount of valuable data has accumulated. Dr. Montgomery has presented a voluminous thesis on the subject and has produced statistical evidence of the bearing of many conditions, physical and social, on the progress of the disease. The investigation aimed at correlating the clinical types of lobar pneumonia with the serological types of the pneumococcus. It was conducted on lines which involved consideration of the clinical, epidemiological,

bacteriological, and pathological aspects of the disease. Each case was subjected to a very thorough clinical examination on admission, and thereafter daily observations were made and the findings recorded with regard to the variations in the clinical condition. Particular attention was devoted to changes in blood pressure throughout the disease and findings hitherto unrecorded were obtained. Specimens of sputum and discharges were daily examined for the presence of the infecting organism. On fatal cases autopsies were carried out where possible and the findings compared with the clinical data. Special attention was paid to evidence of septicæmia. The occupation, the social state, and the housing conditions of each case were investigated, and enquiry was made regarding any possible exposure to infection. In discharged cases the carrier state was investigated at two-monthly intervals, these examinations embracing detailed consideration of ear, throat and nose, and chest conditions, and search of the sputum and discharges (if any) for pneumococci. Careful enquiry was made regarding the occurrence of pneumonia among the contacts of discharged patients. From the mass of material accumulated, it was found possible to suggest differences in the clinical findings and associate them with the different types of infecting organism. Evidence that a carrier state exists in patients recovered from lobar pneumonia was obtained. These results will be published later.

Puerperal Fever and Puerperal Pyrexia.—During the year 136 patients were treated in the ward, and of these, 131 were cases of puerperal fever, of whom 16 died, equivalent to a mortality rate of 12·2 per cent. On account of the widespread attention directed to this condition it has been customary for some years to set forth details of the cases, and to preserve continuity the following figures are included. They are based on dismissals:—

Total Cases, 146.

Age Distribution—

Duration of Pregnancy—

		Fatal Cases.				Fatal Cases.	
Under 20 years, ...	9	1		Full time, ...	...101	12	
20 and under 25,	41	6		Premature, ...	... 5	—	
25 ,, 30,	44	4		Miscarriage, ...	... 3	—	
30 ,, 35,	31	4		Abortion, ...	... 35	4	
35 ,, 40,	16	1		Hydatid Mole, ...	... 1	—	
40 ,, 45,	4	—		Double Tubal Preg-			
45 ,, 50,	1	—		nancy, ...	... 1	—	
		146	16				

The abortions were 24 per cent. of all cases treated.

Of the children born, 48 were male and 62 female. In 4 the births were multiple (in each case twins); 104 were born alive and 6 dead; 139 of the patients were married and 7 single. In the full-time and premature cases it is important to note that 74 were normal births and 10 cases were fatal; in 5 the birth was normal (with chloroform), and 1 patient died; in 26 there was instrumental birth (with chloroform), and 1 patient died; 1 case was a breech presentation in a primipara. Attendance at birth was as follows:—Doctor—11 cases, 2 deaths; midwife—48 cases, 7 deaths; doctor and nurse—38 cases, 2 deaths; maternity home or hospital—22 cases, 2 deaths; no attendant—21 cases, 3 deaths; attended in hospital—6 cases. The unattended cases were all abortions, of whom 6 aborted after admission and were unsuitable for treatment in a puerperal ward.

As regards the condition of the placenta, this had been removed whole in 109 cases, 12 being fatal; broken in 32 cases, 3 being fatal; manually removed in 3 cases, 1 fatal; hydatid mole and double tubal pregnancy, 1 each. The previous obstetric history showed that 9 patients had previous abortions and 4 had had repeated abortions. In 7 cases there was a history of difficult labour. The causes of death included 7 due to septicæmia, 2 to pyæmia, 2 to cerebral embolism.

Pyrexia.—The following table shows the time of occurrence and the duration of pyrexia:—

		Number of Days.												
		1	2	3	4	5	6	7	8	9	10	—14	—21	+21
		Number of Cases.												
Onset of Fever after														
Birth,...	...	19	23	21	6	6	7	12	1	4	2	6	11	5
Days febrile before														
Admission, ...	...	45	16	18	13	4	4	5	2	1	—	2	1	1
Duration of Primary														
Fever, ...	...	9	16	26	16	3	8	7	4	3	3	3	8	25
Fever on day of Confinement, ...												10		
Fever day prior to Confinement, ...												3		
Admitted on first day of fever, ...												24		
Cases with no fever prior to admission, ...												10		
Cases with no fever after admission, ...												13		
Febrile, but died in less than 24 hours after admission, ...												2		

It will again be noted that the duration of pyrexia prior to admission is comparatively short in most cases.

Bacteriological Findings—

ORGANISMS CULTURED FROM CERVICAL SMEARS.

	All Cases.	Fatal Cases.
Streptococci, ...	13	4
Staphylococci, ...	9	1
Bacillus Coli, ...	17	2
Pneumococcus, ...	7	1
Streptococci and Staphylococci, ...	1	1
Streptococci and B. Coli, ...	9	—
Staphylococci and B. Coli, ...	8	—
B. Coli and Pneumococci, ...	6	—
B. Coli, Staphylococci, and Pneumococci, ...	1	—
B. Coli, Streptococci, and Pneumococci, ...	1	1
Streptococci, Staphylococci, and B. Coli, ...	2	—
No growth obtained, ...	17	2

ORGANISMS OBTAINED FROM BLOOD CULTURES.

Aerobic—

Streptococcus Hæmolyticus, ...	1	1
Staphylococcus Aureus, ...	5	2
Bacillus Coli,... ..	2	2
Pneumococcus, ...	1	1
No growth obtained, ...	40	9

Anærobic—

No growth obtained, ...	15	3
----------------------------	----	---

Treatment.—Serum treatment was extensively practised. 65 women were treated with doses varying from 20 to 40 c.c., while 18 received a prophylactic dose of 10 c.c. The serum used was antistreptococcal (scarlet fever type). Treatment by glycerine injections was continued in suitable cases. Adexolin capsules were again given with apparent benefit in a few selected cases.

Venereal Disease.—During the year 242 patients were dismissed. This represents an increase of 39 on the previous year. 24 beds were available and were fully occupied. Most of the patients were received through the various treatment centres because of complications requiring indoor treatment. The cases were classified as follows:—Syphilis, 64; gonorrhœa, 132; soft chancre, 9; non-specific venereal infection, 32; non-venereal, 1; syphilis and gonorrhœa, 3; syphilis and soft chancre, 1; total, 242.

The syphilitic cases represented all stages of the disease and were classified as follows:—Primary, 17; secondary, 20; tertiary, 16; neuro-syphilis, 10; extra-genital, 1; total, 64.

In the gonorrhœal group the following complications were present:—Epididymitis, 61; prostatitis, 32; arthritis, 11; peri-

urethral abscess, 4; cowperitis, posterior urethritis, &c., 24; total, 132.

From the various treatment centres there were admitted during the year 4 cases of arsenical jaundice and 7 cases of arsenical dermatitis. All made good recoveries.

3 deaths occurred during the year, of whom 2 were elderly patients with concurrent cardiac and pulmonary disease. The remaining death resulted from toxæmia and hæmaturia, which, on investigation, proved to be unassociated with his specific treatment.

The average daily residence of all patients was 31 days.

THOMAS ARCHIBALD,

Physician-Superintendent.

19th May, 1933.

	Admitted.		Dismissed.		Died.		In Hospital, 31st Dec., 1932.		Remaining Mortality, per cent.		Average Residence (days).		Deaths.		Males.		Females.		Altered Diagnosis.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	-5	+5	-15	+15			
Typhus, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14		
Enteric Fever, ...	7	25	4	19	1	5	2	2	20.0	20.8	55	54	19	15	1	3	1	4	6	14	24
Paratyphoid Fever (B.),	1	8	1	8	—	—	—	—	—	—	15	33	—	—	1	—	—	—	1	7	3
Continued and Undefined Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14
Puerperal Fever, ...	—	131	—	—	—	16	—	14	—	12.2	—	49	—	17	—	—	—	—	1	130	11
Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever, ...	1,345	1,679	1,311	1,670	11	23	145	204	0.8	1.3	37	38	12	13	416	750	156	436	973	284	127
Diphtheria & Mem. Croup,	391	485	395	507	26	24	28	27	6.2	4.5	40	44	4	4	150	233	38	144	293	94	165
Erysipelas, ...	—	1	—	1	—	—	—	—	—	—	1	19	—	—	—	—	—	1	—	—	—
Cholera, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	66
Cerebro-spinal Fever, ...	32	13	13	5	18	5	5	4	58.1	50.0	64	74	35	7	16	4	11	8	2	—	—
Trachoma, ...	—	—	1	—	—	—	1	—	—	—	129	—	—	—	—	—	1	—	—	—	—
Encephalitis Lethargica, Acute Poliomyelitis,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute Poliomyelitis, ...	—	—	—	1	—	—	—	—	—	—	—	159	—	—	—	—	—	—	1	—	—
Acute Primary Pneumonia, 634	344	512	264	121	71	41	34	19.1	21.2	29	39	11	9	218	167	248	171	76	88	139	—
Acute Influenzal Pneumonia, 51	27	34	19	7	3	11	5	17.1	13.6	22	28	3	6	2	8	31	3	2	17	10	—
Malaria, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	8	4	1	3
Dysentery, ...	4	13	4	12	—	1	—	—	—	7.7	31	35	—	1	4	—	—	—	—	—	—
Relapsing Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis,	13	2	11	2	2	—	—	15.4	—	—	32	18	5	—	—	3	10	—	—	2	—
Other forms of Tuberculosis, 14	10	1	1	1	13	9	—	92.9	90.0	1	70	6	7	7	3	4	5	3	2	—	—
Measles, ...	71	73	105	99	18	22	—	14.6	18.2	58	54	33	17	111	10	2	104	10	7	16	—
German Measles,	17	10	14	10	—	—	3	—	—	—	14	11	—	—	6	7	1	5	4	1	—
Whooping-cough,	21	27	6	6	4	7	13	15	40.0	53.8	82	60	6	17	10	—	11	2	—	1	—
Chickenpox,* ...	68	66	55	67	1	1	13	8	1.8	1.5	37	40	5	15	35	17	4	35	28	5	6
Mumps, ...	—	3	—	3	—	—	—	—	—	—	16	—	—	—	—	—	—	—	1	2	—
Veneral Diseases, Babies with Mothers, ...	234	—	239	—	3	—	16	—	1.2	—	31	—	28	—	—	—	242	—	—	—	—
No apparent Disease,	8	6	8	6	—	—	—	—	—	—	8	14	—	—	2	5	1	2	3	1	—
Others, ...	165	199	155	177	9	11	18	17	5.5	5.9	21	22	14	13	64	46	54	50	38	100	—
Influenza,	12	23	9	17	—	—	3	6	—	—	14	9	—	—	—	3	6	—	—	17	—
Puerperal Pyrexia,	—	6	—	5	—	—	—	1	—	—	—	36	—	—	—	—	—	—	—	5	9
Impetigo, ...	—	2	—	2	—	—	—	—	—	—	—	38	—	—	—	—	—	2	—	—	—
Mothers with Babies, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, ...	3,090	3,153	2,878	3,016	234	198	299	337	7.5	6.2	35	39	14	11	1,043	1,259	810	989	1,448	777	594

*1 male died Chickenpox and Enteritis; 1 female Chickenpox only.

RUCHILL FEVER AND TUBERCULOSIS HOSPITAL.

The total number of cases treated in hospital during the year was 6,492, which is practically the same as last year. A large increase in the number of scarlet fever patients occurred, but this was counter-balanced to a considerable degree by a very marked drop in the pneumonia cases.

The general mortality rate was 8·7 per cent., as compared with 10·5 per cent. for the previous year.

Mention should be made of the effect as felt in the hospital of the curtailment of the admissions, particularly of cases of scarlet fever. This policy, together with a lessened incidence of pneumonia, had a distinctly beneficial effect upon the work of the hospital, more especially from the nursing point of view. The available staff was fully occupied, but instead of working at high pressure continuously throughout the whole winter with practically no margin to work on, there were always nurses available to supply reliefs in wards where off duty, sickness, or exceptional work demanded their presence.

There were fewer enterica diseases treated this year, namely, 23 enteric fever and 10 paratyphoid fever, as compared with 36 and 8 respectively last year.

There were no fatalities among the paratyphoid patients, and the enteric mortality was 5·5 per cent. against 14 per cent. last year.

Scarlet fever cases numbered 2,726, an increase of more than 300 over last year's figure. The disease, however, was generally of a mild type, and the mortality rate was only 1·5 per cent., practically the same as last year.

There was a slight increase in the number of diphtheria patients over last year, namely, 667 against 624. The mortality rate was much the same, being 4·6 per cent. The cases did not present anything of special note, the proportion of severe infections not being unduly high. Cultures from patients admitted with diphtheria have, during part of the year, been submitted to special bacteriological examination with a view to ascertaining the presence of the gravis type of organism in Glasgow. So far the findings have been entirely negative, indicating that this type of the diphtheria organism is not prevalent.

Erysipelas patients dealt with numbered 532, which figure is practically the same as that of last year. The mortality rate,

however, was higher, being 9.5 per cent., as compared with 7.6 per cent.

There still continued a fairly steady flow of cerebro-spinal fever cases, 88 being treated during the year. The mortality rate was 66.0 per cent., as compared with 75.8 per cent. last year, a satisfactory drop, though still very high.

Acute primary pneumonia cases were considerably fewer this year than last, the respective figures being 851 and 1,094. There was also a slight fall in the mortality rate, this year's figures being 18.7 per cent., as compared with 19.6 per cent. The typing of the organisms obtained from the patients has been continued, and serum therapy has been employed in a number of cases. During the outbreak of influenza in the latter part of the year, 39 cases of influenzal-pneumonia were dealt with, the mortality rate of these cases was very high (32.6 per cent), in comparison with the ordinary pneumonia rate.

A large proportionate increase occurred in the number of bacillary dysentery cases, 59 patients being treated, as compared with 25. The mortality rate was, however, considerably lower.

Measles cases continued to be admitted during the earlier part of the year and numbered 485, as compared with 548 last year. The mortality rate dropped to 12.9 per cent. from 15.0 per cent.

A large falling off in the numbers of whooping-cough is recorded, there being only 169, as compared with 417, though towards the end of the year admissions began to increase fairly rapidly.

The Visiting Aural Surgeon during the year attended 488 patients, of whom 331 were seen for the first time. The usual conditions were dealt with, the majority being cases of middle ear disease and diseased tonsils. Operations to the number of 73 were performed, mostly consisting of removal of tonsils and adenoids.

Dr. H. Baxter, Medical Officer in charge of the Tuberculosis Section of the hospital, presents the following report regarding the work carried on there:—

SANATORIUM.

“During the year 1932 the accommodation in the wards has been severely taxed, and the total number of tuberculosis cases reached the abnormal figure, for this department, of 835. This number represents an increase of 52 cases over the figure for 1931 and 138 over the figure for 1930. The proportion of deaths to the total number of cases treated during the year was 27 per cent.,

a decrease of 2 per cent., while the figure corrected for deaths due to pulmonary tuberculosis was 25 per cent. The average stay in hospital per patient was, as in the previous year, four months, and, although many of these patients would have benefited by further sanatorium treatment, the number of actual transfers effected was relatively very small.

“ This year the table showing the returns for tuberculosis cases has been compiled with reference to the Ministry of Health classification, and thus the type groups cannot be readily compared to those of previous years. The types of cases, however, have not varied much, but there is a definite increase in the number of cases of unilateral disease which is suitable for collapse therapy. The routine general treatment remains unchanged, and is directed towards supervised rest, diet, graduated convalescence, and open air work and exercises. Specialised treatment for suitable cases consists of artificial heliotherapy, aspiration alone or combined with gas replacement, artificial pneumothorax, and gelatinothorax. Gold therapy has been used in a very small number of cases without any particular degree of success. The extensive application of collapse therapy has greatly increased the work of the nursing, medical, and x-ray staffs, and the out-patient department has increased steadily throughout the year, the extra work entailed has made a serious encroachment on the routine work of the hospital.

“ The necessity of specialised treatment for tuberculosis cases exhibiting oral sepsis, from dental caries and pyorrhœa alveolaris remains very obvious, and the need for the services of a dental surgeon cannot be too strongly advocated. During the year, 90 dental extractions were performed by the medical staff.

“ Throughout the year the patients have taken full advantage of the various recreational facilities, concerts, and competitions which have been organised, and, although discipline has been keenly enforced, there have been few complaints. The scheme, introduced early in the year, of providing patients before admission to the wards with a printed copy of “ Rules for Tuberculosis Patients ” appears to be satisfactory, and has tended to make the patients more amenable to their treatment and the essential discipline that it entails.

W. M. ELLIOT,

Physician-Superintendent.

June, 1933.

KNIGHTSWOOD FEVER AND TUBERCULOSIS HOSPITAL.

The number of patients dismissed including those who died during the year 1932 was 2,401, as against 2,416 for the previous year. All the wards were used for the treatment of fevers, except two pavilions accommodating 80 patients with advanced phthisis. The number of fever patients dismissed from hospital was 2,041, while 158 died, making a total of 2,199 patients. The mortality rate was 7·2 per cent., as against 10 per cent. for the previous year.

Pneumonia.—Patients treated totalled 509, and of these, 205 were lobar pneumonia; 71 were cases of broncho-pneumonia in adults; 104 were cases of broncho-pneumonia in children; and 129 were found definitely either not to be suffering from pneumonia or perhaps merely from bronchitis. The mortality rate for the whole group was 18·07 per cent. which exceeded that for the previous year, 16·7 per cent. The death rate for the 205 verified cases of lobar pneumonia was 25·3 per cent., which showed that the illness was very severe in character. The following table shows the distribution of 188 typed cases of lobar pneumonia admitted during the year in relation to the frequency and fatality percentages of each type:—

	Cases.	Deaths.	Frequency Percentage.	Fatality Percentage.
Type I, ...	67	17	35·1	25·4
Type II, ...	81	25	43·1	30·9
Type III, ...	7	4	3·7	57·1
Group IV, ...	33	1	17·6	3·0
Total, ...	188	47	—	25·0

The data shown above reveals the high incidence and the high fatality rate of Type II and the low incidence and the low fatality rate of Group IV infections respectively.

A study of 60 cases of lobar pneumonia and 30 cases of broncho-pneumonia occurring in the month of December during the influenza epidemic suggested that the mortality was mainly due to the invasion of Type II and Group IV pneumococci of persons weakened by influenza. It also appeared that when pneumococci belonging to Group IV cause lobar pneumonia the prognosis is good, whereas in broncho-pneumonia due to organisms of this group the death rate may exceed 20 per cent.

The investigation conducted by Dr. Christie in this hospital throughout this year of Type Specific Organisms in acute pneumonia seemed to demonstrate that the disease tended to pursue a distinctive clinical course as determined by the type of infecting organism and that the recovery of pneumococci from the blood stream demanded a guarded prognosis. It was found that (a) 24 per cent. of all patients convalescing from Types I and II pneumonias were dismissed with the causal organisms in their respiratory passages; that in a minority of cases type specific pneumococci completely disappear immediately after crisis; and that Type II organisms are more prone to persist than Type I; (b) healthy persons in contact with lobar pneumonia patients are liable to carry pneumococci for a varying period especially in the naso-pharynx and the persistence of type specific pneumococci in carriers is not accompanied by any diminution in virulence; (c) Group IV pneumococci are commensals in the throats of 40 to 60 per cent. of normal persons, while Type III organisms occur in proportions varying from 5 to 8 per cent.

Measles.—The number of cases treated was 209, and 84 of these cases were complicated with pneumonia. The fatality rate—13.3 per cent. was due to pneumonia alone or combined with enteritis.

During the year an investigation was made into the use of convalescent measles serum in the prophylaxis of the disease. The amount of serum collected was 2,960 c.cm. The dose adopted as a standard was 5 c.cm. injected intramuscularly. Out of 233 patients inoculated, 185 entirely escaped infection, which was equivalent to a protection rate of 80 per cent. The attack was attenuated in 36 cases. The injections given up to the eighth day after exposure were efficacious, but their potency became markedly diminished after the tenth day and by the fourteenth day there was no protection whatever. The duration of complete immunity produced by the serum appeared to be about fourteen days and partial protection extended to six weeks or even longer. It would appear that the best method of utilising the serum is not to prevent measles but rather to convert what might be a fatal attack into an attenuated form of the disease with no complications. The active immunity thus produced will be invaluable, whereas the passive immunity lasts only two to six weeks. A very large amount of immune adult serum has now been collected and a similar investigation will be carried out with this preparation next winter in order to determine how far adult serum is useful and in what doses for the prevention of measles.

Scarlet Fever.—Larger numbers were treated, 1,078 as against 820 for the previous year. The type of case was very mild, the

mortality rate being only .74 per cent. as against 1.2 per cent. in the preceding year. 8 deaths occurred, 1 due to nephritis, 2 to pneumonia, 4 to septic scarlet fever, and 1 to meningitis following otitis media. The new concentrated antitoxin for scarlet fever was only administered to 147 acutely ill patients as the type of case admitted was usually not very severe and the majority of the patients recovered quite well without the administration of the antitoxin. There were subjected to the Dick Test, 37 nurses, 2 of whom were found to give a positive reaction. One of the latter two nurses developed scarlet fever before she could be immunised, and the other nurse developed rheumatism after the first immunisation dose, so that in her case the process had to be abandoned.

During the year the aurist visited weekly all patients suffering from otitis media and it was found necessary to remove the tonsils and adenoids of 32 of these patients in order to hasten the drying up of the discharge. During the same period the conservative mastoid operation was performed on 3 occasions with a similar object.

Diphtheria.—Larger numbers were treated, 278 as against 217 for the previous year. The mortality rate was 6.4 per cent. as against 3.2 per cent. in the preceding year. 18 deaths occurred, 11 due to cardiac paralysis, 5 following tracheotomy, and 2 to pneumonia. Many more malignant forms of the disease were admitted this year from this district as compared with other years, and this accounts for the 11 deaths due to cardiac paralysis. The aurist enucleated the tonsils and removed the adenoids of 17 patients who were found to be carriers and in a very short time after the operation the patients were able to be dismissed.

The Schick Test was performed on 27 nurses, 11 of whom were found to give a positive reaction and were later immunised with toxoid antitoxin mixture.

Whooping-Cough.—The total number of patients discharged from hospital was 33 and 7 died, making a total of 40 patients. The deaths were due to pneumonia alone or combined with enteritis.

Pulmonary Tuberculosis.—During the past year 131 phthisis cases were discharged from hospital and 71 died, making a total of 202 patients. The hospital was mainly used for the treatment and isolation of the more advanced types of patient. As an illustration, no less than 83.1 per cent were in an advanced stage

of the disease on admission. The following table shows the medical classification on admission:—

Stage of Disease.					Number of Cases.	Number of Deaths. in each Group.
Early,...	...	...	...	...	8	—
Intermediate,	...	...	...	...	26	2
Advanced,	...	...	...	...	168	69
Total, ...					202	71

Details of each of these groups are shown in the following table:—

Stage of Disease.		Arrested.	Much improved.	Improved.	Not improved.	Died.	Total.
Early Cases,	...	1	3	4	—	—	8
Intermediate,	...	—	8	13	3	2	26
Advanced,...	...	1	10	41	47	69	168
Total,...		2	21	58	50	71	202

Apart from careful nursing and attention to the general health no special form of treatment was adopted as the majority were in a very advanced stage of the disease. The health of the hospital staff was good, no illness of a very serious nature having occurred.

WILLIAM DOW,
Physician-Superintendent.

May, 1933.

DATA BASED ON DISMISSALS AND DEATHS FOR YEAR 1932.

Disease.	Admitted.		Dismissed.		Died.		Remaining in Hospital at 31st Dec., 1932.		Mortality, Dismissals, Deaths.		Average Residence (days).		Male.		Female.		Ages.		Altered Diagnosis.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	15+	15+	15+
Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Enteric Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paratyphoid B., ...	—	3	—	—	—	—	—	—	33.3	—	33	—	—	—	—	—	—	3	—
Continued Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever, ...	562	511	556	514	4	4	65	54	0.7	0.8	39	39	16	49	132	353	75	130	8
Diphtheria & Mem. Croup, ...	130	145	116	144	11	7	17	15	8.7	4.6	46	43	18	6	32	81	14	37	6
Erysipelas, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-spinal Fever, ...	1	—	—	—	—	—	—	—	100.0	—	—	13	—	—	1	—	—	—	1
Ophthalmia Neonatorum, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trachoma, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute Encephalitis Lethargica	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute Poliomyelitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute Poliomyelitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute Primary Pneumonia, ...	371	83	304	79	62	14	27	4	16.9	15.1	29	33	6	9	87	78	201	67	1
Acute Influenzal Pneumonia, ...	62	7	28	6	16	—	19	1	36.4	—	29	25	9	—	1	6	37	2	3
Malaria, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	1	—	6	1
Dysentery, ...	7	10	6	12	—	—	1	—	—	—	33	34	—	—	—	—	—	—	2
Relapsing Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis, ...	1	—	1	—	—	—	—	—	—	—	16	—	—	—	—	—	1	—	—
Other forms of Tuberculosis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles, ...	58	86	67	114	15	13	—	2	18.3	10.3	42	30	22	14	70	10	2	80	3
German Measles, ...	2	4	2	4	—	—	—	—	—	—	12	11	—	—	1	1	—	—	3
Whooping-cough, ...	18	35	9	25	3	6	6	4	25.0	19.4	32	41	7	9	11	1	—	25	1
Chickenpox, ...	5	1	5	1	—	—	—	—	—	—	18	53	—	—	4	1	—	1	2
Mumps, ...	3	4	3	4	—	—	—	—	—	—	24	20	—	—	3	—	—	3	—
Child with Mother, ...	—	—	—	—	—	—	—	—	—	—	30	—	—	—	—	—	—	—	—
No apparent Disease, ...	6	4	6	4	—	—	—	—	—	—	12	8	—	—	2	4	—	1	3
Others, ...	3	7	2	8	1	—	—	—	33.3	—	59	37	4	—	1	—	2	2	—
Unclassified, ...	—	20	—	18	—	—	—	3	—	—	23	—	—	—	—	—	—	—	—
Influenza, ...	—	2	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	18
Totals, ...	1,229	923	1,105	936	113	45	135	85	9.3	4.6	37	37	10	14	350	536	332	354	29
Phthisis, ...	238	—	128	—	74	—	73	—	36.6	—	114	—	74	—	—	1	201	—	—

SHIELDHALL FEVER HOSPITAL.

During the year 1,074 patients passed through the hospital, an increase of 14 as compared with the previous twelve months. The general death-rate was 7·8 per cent., as compared with 7·3 per cent. for 1931. The largest number of beds occupied was 125, on 13th January, and the smallest 54, on 1st August, the average being 98.

Infectious disease among members of the staff was rather more frequent than usual, there being 2 cases of diphtheria, and 1 each of scarlatina, erysipelas, and rubella, all among nurses at the beginning of their training.

Scarlatina.—448 patients were treated. This disease, after passing through a mild phase of several years, is again becoming apparently more malignant. The mortality rate, 1·6 per cent, is the highest since 1925. The specific antitoxin, which is now made in a less concentrated form than formerly, appears to be less effective, even when a correspondingly bigger dose is given. Apart from this, as has been observed by Joe and others, the serum has little effect in reducing the period of stay in hospital, and very few patients can be dismissed in less than four weeks.

The incidence of complications varies little from year to year, the figures for 1932 being:—otorrhœa, 9·2 per cent.; rhinorrhœa, 12·3 per cent.; cervical adenitis, 21·8 per cent.; arthritis, 6·0 per cent.; and albuminuria, 2·2 per cent. Pericarditis occurred in 1 patient and pneumonia in no less than 5. 2 of these developed empyema and were successfully treated by aspiration and subsequent rib-resection. Of the 7 fatal cases of scarlatina, 1 died of pneumonia and 1 of coincident measles with pneumonia; 2 were septic cases and 1 a true toxic case; 1 patient developed streptococcal pyæmic abscesses, and the last extensive gangrene of the tissues of the thigh.

Operative work performed by the Aural Surgeon differed little in amount from that of 1931, and was as follows:—tonsillectomy, 17; myringotomy, 1; mastoid operation, 2. Total number of patients attended, 66. Results of operations:—

	Otorrhœa.	Rhinorrhœa
Immediate cessation of discharge, ...	2	3
Gradual improvement, ...	4	4
No improvement, ...	3	1
	9	8

Diphtheria.—206 patients were treated, the following being the types observed:—Faucial, 178; faucial and nasal, 9; nasal, 2; conjunctival, 1; faucial and laryngeal, 9; and laryngeal, 7.

Severe cardiac symptoms were observed in 9 patients, paralysis of the palate in 12, and ciliary, orbital, and general paralysis each in 1 patient. 5 required tracheotomy, as follows:—(1) 2 years—good recovery; (2) 5 years—good recovery; (3) 4 years—obstruction low, unrelieved by operation, death on third day; (4) 5 years—croup subsequent to measles, death from pneumonia and streptococcal empyema; (5) 1 year—death from pneumonia.

The remaining fatal cases, 8 in number, belonged to the faucial or nasal groups. 3 were hæmorrhagic, and all died within 14 days of admission. The mortality rate, 5·3 per cent., is more than twice that of 1931.

Pneumonia.—317 patients were treated, with a mortality rate of 14·8 per cent., which is slightly lower than last year. Meningitis accounted for 2 deaths, but a child of eighteen months recovered from this complication. Though the organism was not found, the symptoms and signs were those of pneumococcal meningitis. A number of babies admitted to the pneumonia ward are of very low vitality, ill nourished, and prone to enteritis. In treating them Haliverol (P. D. & Co.), which is rich in vitamins A and D, has been found beneficial. Pleural empyema appeared in 9 patients, with the following distribution:—Under four years, 1; under six years, 2; under fourteen years, 4; and over fourteen, 2. In 4 the right side was affected, in 5 the left. The pus was invariably of pneumococcal type. The method of treatment was rib-resection with closed drainage, save in the youngest child (1 year), where an intercostal incision sufficed. Local anaesthesia is almost always satisfactory. Irrigation with Dakin's solution was required in 3 instances. All made good recoveries.

Measles.—74 patients were treated during the first two months of the year, with the mortality rate of 18·9 per cent. More than half of them suffered also from pneumonia, and there were several examples of severe enteritis. Purulent conjunctivitis and iritis was observed in 6, and one case of pneumococcal ophthalmia ended fatally. Measles patients are specially liable to develop multiple subcutaneous abscesses, and there were 7 instances of this complication, one of which responded only to an autogenous vaccine.

Other Diseases.—The remaining 29 cases included two each of rubella, whooping-cough, and pulmonary tuberculosis, one erysipelas, one cerebro-spinal fever, and 21 non-infectious conditions. 33 diagnoses were revised during the year.

WILLIAM NAPIER,
Physician-Superintendent.

June, 1933.

SHIELDHALL HOSPITAL.—STATEMENT OF CASES TREATED ACCORDING TO SEX.
DATA BASED ON DISMISSALS AND DEATHS FOR THE YEAR 1932.

Disease.	Admitted.		Dismissed.		Died.		Remaining in Hospital, 31st Dec., 1932.						Average Residence (days).				Ages.				Altered Diagnosis.
							Mortality, per cent.						Dismissals.		Deaths.		Males.		Females.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	—5	15+	—5	15+	
Enteric Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever, ...	206	256	201	240	1	6	24	31	0.5	2.4	38	35	8	15	78	107	17	52	150	44	11
Diphtheria & Mem. Croup,	83	110	86	109	7	4	11	14	7.5	3.5	46	43	17	35	28	47	18	20	73	20	6
Erysipelas, ...	—	1	—	1	—	—	—	—	—	—	10	—	—	—	—	—	—	—	—	1	—
Cerebro-spinal Fever, ...	—	1	—	1	—	—	—	—	—	—	35	—	—	—	—	—	1	—	—	—	—
Lobar Pneumonia, ...	104	57	90	48	13	7	8	8	12.6	12.7	25	26	3	5	13	35	55	9	21	25	6
Broncho-Pneumonia, ...	74	83	69	63	11	16	4	7	13.7	20.2	27	28	11	11	77	1	2	65	7	7	5
Measles, ...	28	32	24	36	11	3	—	—	31.4	7.6	40	39	18	9	34	—	1	26	4	9	5
German Measles, ...	—	2	—	2	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	2	—
Whooping-cough, ...	1	1	—	1	1	—	—	—	50.0	—	—	6	31	—	1	—	—	1	—	—	—
Pulmonary Tuberculosis,	1	1	—	—	—	1	1	—	100.0	100.0	—	—	131	14	1	—	—	—	1	—	—
Other Affections, ...	9	12	7	12	2	—	—	—	22.2	—	16	18	1	—	5	3	1	3	6	3	—
Totals, ...	506	556	477	513	47	37	47	60	8.9	6.7	33	35	14	13	237	193	94	177	262	111	33

ROBROYSTON HOSPITAL.

The distribution of the accommodation in the hospital between the different types of cases treated is roughly as follows:—

Tuberculosis	{ Pulmonary, ... 150 }	440
	{ Non-pulmonary, ... 290 }	
Puerperal Sepsis, ...	...	56
Pneumonia, ...	...	56

Some degree of variation from the above figures takes place from time to time, for example, the pneumonia pavilion is not fully occupied during certain periods in summer, and at such times part of the pavilion is given over to the treatment of pulmonary tuberculosis.

PULMONARY TUBERCULOSIS.

The total number of cases of pulmonary tuberculosis dismissed from hospital during the year was 228, of whom 22, or less than 10 per cent., were in the early stages of the disease when admitted. The deaths numbered 78, or 34 per cent. of the dismissals. More than one-third of the cases were in hospital for over 300 days.

Collapse Therapy and Surgical Treatment. — Artificial pneumothorax was induced in 29 cases. Thoracoplasty was only performed in 1 case, and in another, surgical drainage of a pulmonary cavity has given an excellent result up to the present.

A survey has been made of the results of artificial pneumothorax in 30 cases in whom both lungs were affected. These patients were offered the chance of treatment by collapse of the less affected lung, either because they seemed to have a hopeless prognosis or because they were not responding to ordinary treatment and did not seem likely to do so. In these cases chrysotherapy was employed concurrently with artificial pneumothorax. The results may be summarised as follows:—

- (1) The mortality among those cases where reasonable collapse was possible was much lower than in those cases where collapse could not be obtained over a comparable period; and
- (2) If the better lung is not more than 25 per cent. involved and if the disease in it is not acute, artificial pneumothorax treatment is in many instances of distinct benefit.

NON-PULMONARY TUBERCULOSIS.

This hospital receives non-pulmonary cases who are over 15 years of age. Children below this age are all treated in Mearns Kirk Hospital. The following report, therefore, deals entirely with adults and adolescents.

Tubercular Lymphadenitis.—Of the 17 cases treated, 8 had abscess or sinus formation on admission. In the treatment of disease of the superficial lymphatic glands in the adult, radical surgical removal gives the best results in early cases. Conservative measures are in such cases both tedious and prolonged.

Tuberculosis of the Spine.—Out of 35 cases, 25 had either no deformity or deformity of a very minor degree. Such cases are very suitable for treatment, especially by Hibb's or Albee's operations. These operations are performed wherever possible and are generally the means of reducing the patient's stay in hospital by half. Cases most suitable for operation are those with disease of the lower dorsal or lumbar spine, and, of course, without such complications as sinus formation. The average duration of stay in hospital was 797 days. In all, 20 cases were discharged ambulant or fit.

Tuberculosis of the Hip Joint.—The total number of cases was 23, and 18 of these were discharged fit. 6 were treated by operation, and the remainder by conservative methods. The results on the whole are satisfactory, but hospital treatment is necessarily prolonged, the average being 763 days.

Tuberculosis of Other Bones and Joints.—In diseases of the smaller bones and joints the results are on the whole good, and in the case of the non-weight-bearing joints restoration of functional efficiency is in a large measure accomplished. With regard to the knee, sound ankylosis should be the aim, and the best method of achieving this is by excision of the joint. In general the tendency is to make use of operative measures for these forms of tuberculosis, especially for the removal of infected and necrosed areas, but this does not mean that general measures can in any way be neglected, or that the importance of time as an element in the treatment of the case can be minimised. It cannot be too much emphasised that every possible means should be taken outside of hospital to prevent abscesses from breaking down and discharging on to the surface. When this takes place the chances of the patient are enormously prejudiced.

Abdominal Tuberculosis.—The fatality rate in hospital during 1932 was lower than formerly. The mainstay of treatment is general measures. Laparotomy does not appear to alter the course

of the disease in any way, but it is of value as a diagnostic measure.

Other Forms of Tuberculosis.—With regard to multiple tuberculosis, the prognosis continues to be very poor. In renal disease, apart from those unilateral cases where nephrectomy can be carried out, tuberculin remains the most satisfactory line of treatment.

NON-TUBERCULOUS CASES.

During the year 44 non-tuberculous cases were admitted, and the following is a list of the diagnoses:—Slipped femoral epiphysis; osteitis of spine; chronic osteomyelitis of spine; osteitis of femur; subacute appendicitis; Brodie's abscess of tibia; Brodie's abscess of femur; carcinoma of rectum; umbilical abscess; chronic appendicitis; empyema; multiple sarcomata; chronic gastric ulcer; dermoid cyst of ovary; Perthe's disease of hip joint; myxosarcoma of right ankle; kyphosis of dorsal spine; pericarditis; osteo-arthritis of spine; osteo-arthritis of left knee; renal calculi; constipation; pyogenic sinus of groin; exostosis of femur; hysteria; bronchiectasis; post-pneumonic fibrosis; carcinoma of lung, &c.

PUERPERAL SEPSIS AND PYREXIA.

The following is a synopsis of all dismissals for year ending 31st December, 1932:—

	Total.	Deaths.
Puerperal sepsis following delivery of a viable child, ...	269	40
Puerperal sepsis following delivery of a non-viable child, ...	53	11
Instances of altered diagnosis (exclusive of abortions),	34	7
Abortions (not septic), ...	30	—
Total, ...	386	58

The death-rate from puerperal sepsis on the figures shown is approximately 16 per cent. Among the deaths were those of 4 women, who, while admitted suffering from puerperal sepsis, died of other diseases before it could be certain that sepsis had been eradicated. Two died of tuberculosis, one of the lungs, and one of the abdomen. One was admitted with every evidence of sepsis but comatose and jaundiced. She had had previously several chloroform anaesthetics at short intervals. A woman, who had been dismissed on her own responsibility 10 weeks before, was readmitted with malignant endocarditis, of which she died. In this case puerperal sepsis on a known old-standing and rheumatic endocarditis was the cause of death.

VERIFIED SEPSIS IN ALL PATIENTS DISMISSED, 1932.

AGE GROUPS.	DURATION OF PREGNANCY.				COMPLICATIONS OF ALL PREGNANCIES OVER 28 WEEKS.						
	PRIMIPARÆ.	MULTIPARÆ.	TOTAL.	NON-VIABLE.		VIABLE.		Hæmorrhage (exclusive of Abortion).	Eclampsia of Albuminuria.	Hyperemesis.	Other
				Under 16 Weeks.	Over 16 and under 28 Weeks.	Born Alive.	Stillborn.				
-15, ...	—	—	—	—	—	—	—	—	—	—	—
-20, ...	20(1)	2	22(1)	2	—	18(1)	2	—	3	2	1
-25, ...	35(7)	29(5)	64(12)	4(2)	1	58(10)	1	2	10(1)	4(1)	4(2)
-30, ...	28(4)	75(10)	103(14)	12(5)	3	85(9)	3	2	6(1)	11	11(1)
-35, ...	14(7)	45(4)	59(11)	8(2)	4(1)	43(7)	4(1)	2	6(2)	10(1)	4(1)
-40, ...	5(2)	55(8)	60(10)	10(1)	5	44(9)	1	2	7(1)	7	9(2)
-45, ...	1(1)	11(2)	12(3)	1	3	5(1)	3(2)	—	2(1)	1	—
-50, ...	—	2	2	—	—	2	—	—	1	—	—
Total, ...	103(22)	219(29)	322(51)	37(10)	16(1)	255(37)	14(3)	8	35(6)	35(2)	29(6)

(Deaths in brackets.)

The higher death-rate among primiparæ is to be noted, and the significance of the much higher mortality occasioned by septic abortions occurring early in pregnancy is worthy of attention. Excluding the toxæmias and accidents of pregnancy, complications included many common illnesses, 14 of which were associated with bacterial infections of parts other than the genital canal. Six patients, apart from these, reported having had influenza during the later months of pregnancy. Multiple pregnancies included 6 twins, and 1 instance of triplets. In 13 patients illegitimacy was admitted. These included 5 abortions and 2 deaths.

Place and Type of Delivery.

(Deaths are shown in brackets.)

		Instrumental.	Percentage Mortality.	Spontaneous.	Percentage Mortality.
At Home, ...	...	45(7)	15.5	174(23)	13.2
In Institutions,...	...	22(6)	27.2	28(4)	14.2
Total, ...	...	67(13)		202(27)	

The 67 operative births are divisible as follows:—Forceps, 63; version alone, 1; cæsarean section, 1; craniotomy, 1; and episiotomy followed by craniotomy, 1.

The following tables show the attendance at birth and the condition and manner of delivery of the placenta:—

<i>Attendance at Birth—</i>		Total.	Deaths.
Doctor alone, ...	...	34	2
Doctor and Midwife, ...	...	89	21
Midwife alone, ...	...	135	16
Handywoman alone, ...	...	5	1
No Attention, ...	...	4	—
Total, ...	...	267	40

Condition and Manner of Birth of Placenta—

Spontaneous Delivery of Child—				Total.	Deaths.
Placenta whole and normal,	...	...	...	193	23
„ broken and normal,	...	...	...	5	2
Manually removed whole or broken,	...	...	...	4	2
Total,				202	27

Operative Delivery of Child—				Total.	Deaths.
Placenta whole and normal,	...	...	...	58	10
„ broken and normal,	...	...	...	6	2
Manually removed whole or broken,	...	...	...	3	1
Total,				67	13

Vaginal Examinations.—In confinements wherein no interference took place apart from vaginal examinations, the following figures may be added to those supplied for 1931 :—

	Total.	Deaths.	Fatality Rate.
No Examination and no Information,	40	5	12·5%
Examination shortly before or during			
Labour, ...	158	20	12·6%
One Examination, ...	55	6	12·0%
Two Examinations, ...	66	9	13·7%
Repeated Examinations, ...	37	5	13·5%

The following table shows (1) the day of onset of illness; (2) the difference in days between onset of illness and hospitalisation; and (3) the duration in days of primary fever in hospital. All are shown separately for spontaneous and operative births, with deaths in brackets :—

Days,	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	Total Cases.
Spontaneous,	24(3)	31(5)	28(7)	19(1)	15	14(5)	4	10(1)	14(1)	3(1)	13	16(2)	10(1)	202(27)																	
Operative,	12(4)	6(1)	10(4)	6(3)	5(1)	3	6	1	2	2	3	7	4	67(13)																	
Spontaneous,	15(2)	34(4)	41(5)	28(6)	30(4)	8(1)	9(1)	6	4	5	7	6(2)	9(2)	202(27)																	
Operative,	4	16(6)	17(5)	6	5	7	3(1)	1	1	—	3(1)	3	1	67(13)																	
Spontaneous,	6(1)	21(1)	18	24(4)	27(2)	16(3)	10(1)	6	19(2)	8(2)	13(1)	9(3)	24(7)	202(27)																	
Operative,	1	6(1)	9	12(3)	3(2)	3(1)	2	2(1)	2(1)	1	8(1)	10(1)	8(2)	67(13)																	

On lines similar to those adopted for the report of year 1931, the principal lesions may be classified as under:—

		Spontaneous Delivery.	Died.	Operative Delivery.	Died.
Perineal Sepsis, ...	...	3	—	2	—
Vaginitis and Cervicitis, ...	...	8	—	3	—
Subinvolution, ...	...	5	—	1	—
Retained Infected Products, ...	...	6	—	1	—
„ „ Lochia, ...	...	46	—	12	—
Septic Endometritis and Metritis, ...	...	27	—	7	—
Salpingitis, ...	...	10	—	3	—
„ with Local Peritonitis, ...	...	6	—	2	1
Pelvic Cellulitis, ...	...	9	—	4	—
Pelvic Peritonitis, ...	...	7	1	2	—
General Peritonitis, ...	...	7	5	2	2
Phlegmasia Unilateral, ...	...	14	1	6	—
„ Bilateral, ...	...	7	—	4	—
Septicæmia (Clinical), ...	...	21	9	8	4
„ (Verified), ...	...	19	9	8	5
Pyæmia (Clinical), ...	...	5	2	1	—
„ (Verified), ...	...	2	—	1	1
Total, ...	...	202	27	67	13

Bacteriology—Uterine Cultures.

		Spontaneous Delivery.		Operative Delivery.	
		Total.	Died.	Total.	Died.
Streptococci, ...	...	98	12	29	6
Bacillus coli, ...	...	8	—	5	1
Pneumococci, ...	...	5	1	1	—
Streptococci and B. coli, ...	...	20	4	9	1
„ and pneumococci, ...	...	8	1	3	1
„ and staphylococci, ...	...	6	—	—	—
Staphylococci, ...	...	2	—	1	—
Streptococci, b. coli, and pneu- mococci, ...	...	2	—	—	—
B. coli and diphtheroids, ...	...	1	—	—	—
Streptococci and gonococci, ...	...	1	—	—	—
No growth, ...	...	14	1	9	1
No culture taken, ...	...	37	8	10	3
Total, ...	...	202	27	67	13

Of all the cultures investigated for the past year, 65 per cent. were associated with streptococci. A considerable number of the

pure cultures of streptococci were tested for hæmolysis; the resultant figure, 63 per cent., is lower than that for 1931, but is probably due to an increase in mixed streptococcal infections which were not so investigated.

Septicæmias.—The total number of positive hæmocultures was 30.

	Total.	Deaths.
Streptococcus hæmolyticus, ...	21	10
„ non-hæmolyticus, ...	3	2
Bacillus coli, ...	3	—
Pneumococci, ...	1	1
Streptococci and B. coli, ...	1	1
Streptococci and pneumococci, ...	1	1
Total, ...	30	15

Positive hæmocultures were in the main obtained from only the most seriously ill patients. An almost equal number of negative cultures were also obtained. The fatality rate for this latter group was only slightly lower than for the former.

Abortions.—The total number of these dealt with during 1932 was 83 (septic, 53; non-septic, 30), grouped as follows:—

	Non-septic.	Died.	Septic.	Died.
Threatened, ...	3	—	—	—
Inevitable, ...	11	—	7	—
Incomplete, ...	12	—	21	3
Complete, ...	4	—	25	8
Total, ...	30	—	53	11

Classification of septic abortions on admission:—

	Total.	Died.
Uterine Sepsis, ...	33	2
„ with salpingitis, ...	5	—
„ with peritonitis, ...	6	3
Septicæmias, ...	9	6
Total, ...	53	11

The following organisms were found in cervical smears taken from all cases of post-abortum sepsis (deaths are given in raised figures;—Streptococcus, 17⁴; bacillus coli, 11¹; streptococcus and b. coli, 8²; streptococcus with b. coli and pneumococcus, 1⁰; staphylococcus and pneumococcus, 1⁰; bacillus Welchii, 1⁰; bacillus tetani and anærobes, 1¹; no growth, 5⁰; no culture taken, 8³.

Positive hæmocultures from the post-abortum group numbered 6, grouped as follows:—Streptococcus hæmolyticus, 5³; bacillus coli, 1¹.

Treatment.—Bed isolation is essential in the nursing of puerperal sepsis in Robroyston. With limited accommodation and a comparatively large proportion (16 per cent.) of the admissions proving to be other than septic, it is obvious that all of the six cubicles may be occupied at any one time and no accommodation be available for fresh arrivals. After a short period in a cubicle, new patients are warded according to their infection and the likelihood of their infecting others.

Postural drainage probably is of more importance than glycerine instillations. Indeed, in many patients the injection of glycerine seems to have precipitated complications even in spite of careful dosage. The insertion of a soft catheter and free drainage of any infected retained lochia are certainly all that is necessary except in the more seriously ill patients, and in these latter spread to the blood stream has probably already taken place whether it can be verified or not.

Serum continues to be used in comparatively small doses for prophylaxis of uninfected or doubtful patients. In grave infections little benefit has been seen no matter what route has been employed in administration and what serum used. Very large doses have seemed equally ineffectual. An antitoxin to the bacillus *Welchii* has been used in conjunction with the usual measures in some instances of peritonitis and some success may be noted.

Chemotherapy—rational and empirical—has proved disappointing. Various drugs—S.U.P.36, “Edwenil,” “Antibacsyn,” and several arsenical preparations have been tried. Quinine as the bi-hydrochloride given intramuscularly in conjunction with serum, and in organic combination as “Solvichin,” has not so far been successful. General measures for the treatment of any grave toxæmia seem most likely to prove efficacious. A specific therapy is yet to be found.

PNEUMONIA.

A pavilion was again reserved for the treatment of pneumonia. There were in hospital at 31st December, 1931, 38 cases; 323 cases were admitted during the year and 291 were dismissed, leaving 70 cases in hospital on 31st December, 1932.

There were 197 cases of broncho-pneumonia, with 29 deaths, giving a death-rate of 14·7 per cent., as compared with 18·4 per cent. in 1931. The following table shows the number of cases and the mortality rate in certain age-groups:—

	Under	1—	2—	3—	4—	5—	10—15	Over 15	Total.
Number treated, ...	57	55	24	22	17	20	2	—	197
Number of Deaths, ...	17	6	—	3	1	2	—	—	29
Mortality Percentage, ...	29·8	10·9	—	13·6	5·8	10·0	—	—	14·7

Lobar pneumonia provided 41 cases, of whom 8 died, giving a death-rate of 19·5 per cent. The following table shows the number of cases and the mortality rate in the age-groups:—

	Under				Over	Total.
	5	5-	15-	30-	45	
Number treated, ...	9	10	13	4	5	41
Number of Deaths, ...	2	—	3	—	3	8
Mortality Percentage, ...	22·2	—	23·0	—	60·0	19·5

14 cases of influenzal pneumonia were treated, with 4 deaths. The remainder of the cases were made up as follows:—Bronchitis, 31 (1 death); pulmonary tuberculosis, 4; lung abscess, 1; pleurisy, 1; cerebro-spinal meningitis, 2.

DENTAL TREATMENT.

During the year Dr. Hugh M'Kay, L.D.S., made in all 46 visits, and the dental work carried out is as follows:—

Fillings {	Amalgam, ...	...	...	...	...	88
	Cement, ...	...	...	...	...	44
Extractions with Local Anæsthesia,	...	...	...	...	...	500
Scaling, ...	...	...	...	...	...	464
Palpitis Cases, ...	...	...	...	...	...	3
Dressings with Temporary Fillings,	...	...	...	...	...	16
Complete Upper Dentures, ...	...	...	...	...	...	3
Complete Lower Dentures, ...	...	...	...	...	...	2
Examinations, ...	...	...	...	...	...	300 (approx.)

LABORATORY.

The following examinations have been carried out during the year:—

Sputum for tubercle bacillus, ...	...	...	...	...	2,320
Throat cultures for diphtheria, ...	...	...	...	...	50
Urines (microscopical investigations, cultures, &c.), ...	...	...	...	...	290
Cultures from sinuses, ...	...	...	...	...	15
Miscellaneous, ...	...	...	...	...	370

JOHN WATSON,
Medical Superintendent.

4th May, 1933.

MEARNSKIRK HOSPITAL.

The report for 1932 is the first dealing with the work of the entire institution over a full twelve-month period. It will be remembered that only part of the hospital was opened in 1930, the remainder coming into use in May, 1931. The consequent increase in the gross turnover of patients in 1932 as compared with previous years is shown in the following table:—

PATIENTS ADMITTED AND DISMISSED.

1930-1932.

		Admitted.	Dismissed.	In Residence at 31st December.
1930,		385	76	309
1931,		444	275	478
1932,		430	407	501

This report deals mainly with the patients who were dismissed or died in hospital during the year 1932. It has been found expedient to classify them under the original admission diagnosis, although in many cases this was purely tentative.

The data collected this year are of little use on account of the small number of patients in the various groups and certain tables which have been prepared are not included in this report, but it is hoped that by addition from year to year figures of considerable value will be arrived at.

During the year there were 407 dismissals. This total includes 29 deaths (7·1 per cent.), 25 irregular dismissals, and 8 cases transferred to other institutions. 248 patients (60·9 per cent.) were dismissed healed, the disease being apparently arrested in the tuberculous cases. The remainder were improved or much improved on dismissal.

Patients suffering from abdominal or pulmonary conditions formed the largest groups treated and represented 48·6 per cent. of the total. In 220 patients with a surgical tuberculosis, disease was present in more than one site in 66 cases (30 per cent.).

With regard to the duration of residence, the point at which cure is established in tuberculous patients is very indefinite. Time is the ultimate determining factor, and the efficiency of

any line of treatment is measured in inverse proportion to the number of cases in which recurrence of activity takes place. In the 220 cases of proved surgical tuberculosis in this series, the disease had recurred after previous treatment in 41 cases (18.6 per cent.). A longer period of treatment than is usually given is indicated, particularly in those patients who must return on dismissal to an environment totally unsuited to their condition. In practice the dismissal rate is determined largely by the pressure on accommodation and the greatest benefit is thereby secured for the greatest number, although this method may not always work out to the advantage of the individual patient. The opening of Mearnskirk Hospital has made it possible to keep the waiting list of children suffering from surgical tuberculosis low and the pressure for admission at a minimum. Many children have thereby reaped the advantage of a longer stay in hospital than would otherwise have been possible.

Abdominal Tuberculosis.—There were 117 cases in this group, and these comprised 28.8 per cent. of the total dismissals. Although there were 9 deaths in the series the disease as it appeared in hospital was generally of a mild type. The deaths occurred in patients who had advanced disease with caseating masses or widespread adhesions on admission. In 36 cases, after prolonged observation, no evidence of active abdominal disease appeared. In 4 of these, pulmonary lesions were found, in 7 there was definite evidence of rickets, while in 5 cases the following conditions were present:—Pneumococcal peritonitis, cretinism, abdominal injury, cardiac insufficiency, and mental deficiency. In the remaining 20 negative cases, malnutrition appeared to be the cause of the poor general condition present. In these cases, however, definite diagnosis is a matter of no little difficulty. There is no method short of laparotomy by which it can be proved, and considering the results achieved by the general treatment required, whatever the diagnosis, it is a method which few would seek to justify in the first instance. Our practice has been to dismiss these cases with the statement that no evidence of tuberculosis appeared while under observation. In the event of recurrence of symptoms laparotomy would become justifiable on the following grounds, viz.:—(1) Its inherent therapeutic value; (2) the possibility that it might reveal some condition, tuberculous or other, which might be relieved by surgical means; and (3) for the purpose of establishing the diagnosis beyond doubt.

In the 81 cases classified as definite abdominal tuberculosis the disease was acute in 36 cases, subacute in 19, and chronic in 26. The following clinical types were distinguished:—Tuberculous peritonitis, 31 cases; tuberculous peritonitis with

enteritis, 17 cases; tuberculous peritonitis with ascites, 8 cases; tabes mesenterica, 14 cases; caseating abdominal tuberculosis, 11 cases. All patients received general and dietetic treatment, operative interference being required in 5 cases only. At the operations the diagnosis of tabes mesenterica was confirmed in 1 case, in another a diseased appendix was removed, in 1 case acute obstruction was relieved by the division of a constricting band, while in the remaining 2 cases infected abscesses, which pointed through the abdominal wall, were opened. The disease was apparently arrested in 59 cases, while in 5 cases the condition was much improved. There were 7 irregular dismissals, 1 transfer, and 9 deaths. The average duration of residence was 228 days.

Tuberculosis of the Spine.—Of the patients admitted with a diagnosis of Pott's disease, 33 were dismissed or died during 1932. The average duration of residence was 440 days, but this low figure is accounted for by the fact that only one case was treated from start to finish (908 days' residence), while 13 dismissed healed and well consolidated had received the greater part of their treatment elsewhere. There were 2 irregular dismissals, 4 transfers, and 5 deaths in this group. The latter were due to tuberculous meningitis in 2 cases and to multiple infected sinuses with advanced toxæmia and amyloid disease in the other three. In the remaining 8 cases the diagnosis was altered as follows:—Injury of the spine, 2; postural scoliosis, 1; soft tissue abscess, 1; cervical adenitis, 1; abdominal tuberculosis, 2; and pulmonary tuberculosis, 1. The 14 healed cases were fitted with certainlid jackets before dismissal.

Tuberculosis of Bones other than Vertebrae.—Under this heading there were 9 cases of tuberculosis of the long bones of the hands and feet (Dactylitis) and 8 cases of disease of other bones. All cases were dismissed healed after an average residence of 358 days.

Tuberculosis of the Hip Joint.—There were 34 patients in this group, a definite tuberculous arthritis being present in 19 of them. In 2 cases there was a tuberculous osteitis in the neighbourhood of the great trochanter and in 1 a small encysted focus was present in the centre of the femoral neck. All of these were rightly classified under tuberculosis of the hip. In 3 further cases tuberculosis existed but the disease was located in the pubis in one, in the subgluteal bursa in another, while in the third a cold abscess which pointed in the hip region had its origin in caseating abdominal glands. In the remaining 9 cases the diagnosis was altered as follows:—Perthe's disease, 3 cases; bilateral pneumococcal arthritis, 1 case; acute inguinal

adenitis, 1 case; chronic intrapelvic abscess (pyogenic) with sinus, 1 case; sarcoma of pubis, 1 case; traumatic synovitis, 2 cases.

There were 3 deaths among the 22 proven hip cases. 2 of these occurred in patients with early disease and followed the development of tuberculous meningitis. In the third the disease was advanced on admission and death resulted from toxæmia. 3 patients were transferred to other institutions and 1 was dismissed irregularly.

The remaining 15 cases were arranged as follows:—8 were admitted from home, 3 with active but early intra-articular disease, 3 with active extra-articular disease, 1 with old disease requiring correction of a gross adduction deformity, and 1 with recurrence of activity in a joint which had apparently healed with weak fibrous ankylosis. The other 7 were admitted from another institution, 5 with the disease still active, and 2 with healing already commenced. All these cases were dismissed in certalmid splints with the disease apparently arrested. The average duration of residence for the whole group was 488 days, as compared with 747 days for the 3 early intra-articular cases treated from start to finish in this hospital.

Tuberculosis of the Knee.—Of the 24 cases in this group there was evidence of tuberculosis in 21. The disease was limited to the synovial membrane in 10 of them and the bone was affected in 9. In most of the latter the disease probably began in the synovial membrane, the bone being affected secondarily. In the remaining 2 cases there was periostitis of the upper end of the tibia. The diagnosis was altered in 3 cases as follows:—Syphilitic osteitis of the femur, 1; rickets, 1; and traumatic synovitis, 1.

1 death occurred in a patient admitted with synovitis of the knee who later developed disease of the dorsal spine and finally meningitis. The remaining 20 tuberculous cases and the 3 non-tuberculous ones were dismissed healed, walking caliper splints being supplied in 20 cases and a hinged knee-cage in 1. The average duration of residence was 521 days.

Attention should be drawn to the fact that in 21 cases, the oldest of whom was 14 years of age, the disease was recurrent in 7 cases (33·3 per cent.). Adding these figures to those for 1930-31 in which there were 5 recurrences in 11 proved cases, the percentage is raised to 37·5 for all cases dismissed from the hospital. The total figures are too small to allow of definite conclusions, but they seem to confirm our general experience that tuberculous synovitis of the knee in young children is very resistant to conservative treatment. We would hesitate, however, to advise radical operative treatment under the age of 8 years, although we regard operation as the method of choice

from 10 years onward. Conservative methods were largely employed in the cases under consideration. Excision of the joint was, however, carried out in 2 of 5 cases of tuberculous arthritis over 10 years and in 2 of 4 cases under 10 years. In 1 case a large sequestrum was removed from the internal condyle of the femur without entering the joint cavity. In this case healing with a very useful range of movement resulted.

Tuberculosis of the Ankle and Tarsus.—Among cases admitted under the general heading “Tuberculosis of the Ankle,” there are usually cases with no lesion of the ankle proper but with disease affecting some other tarsal bone or joint. In the present group of 11 cases the ankle was affected in 6, the os calcis in 3, and the astragalo navicular joint in 1. In one case the diagnosis was altered to Pes Planus.

There was 1 death which resulted from a rapidly-spreading lymphangitis with toxæmia in an infant with multiple sinuses around the ankle. 2 patients were dismissed irregularly, while the remaining 7 were dismissed healed without deformity and with movement limited in 1 case only. Certal mid splints were supplied in 5 cases. The average duration of residence was 380 days.

Tuberculosis of other Joints.—2 cases of sacro-iliac joint disease, both of which had received treatment elsewhere, were dismissed healed. In 1 of these with a chronic sinus, healing occurred after the removal of a sequestrum from the ilium. 2 wrist cases with osseous foci in the carpal bones were dismissed in appliances with the disease arrested. 1 case admitted as shoulder-joint disease was suffering from an acute axillary abscess and was dismissed healed after operation. There were 5 elbow-joint cases. 1 of these had no tuberculosis, the condition being a synostosis of the upper radio-ulnar joint. In the other 4 the ulna was diseased in every case, the humerus in 3 and the radius in 1. In 1 case the disease was bilateral. Among the tuberculous cases there was 1 irregular dismissal. The others were dismissed healed.

Tuberculosis of Cervical Glands.—In 3 of the 24 cases in this group the diagnosis was altered as follows:—Thyroglossal cyst, 1; syphilitic adenitis, 1; and malnutrition, 1. Of the 21 definite tuberculous cases 14 had old standing lesions on admission, abscess being present in 12 cases and sinus in 11. Radical surgical measures (excision of glands) were adopted in 10 cases, incision of abscess with scraping of the cavity was carried out in 6, and sinuses were scraped in 9 cases. There were

2 irregular dismissals and the others were dismissed as follows:—17 healed and 2 much improved. The average duration of residence was 344 days.

Pulmonary Cases.—In May, 1931, a pavilion was made available for the treatment of children suffering from chronic pulmonary lesions. During the year 81 patients of this group have left hospital, 8 of these being dismissed by death and 5 irregularly. The first admissions under this heading consisted mainly of children with post-pneumonic conditions, but during the year an increasing number of tuberculous infections have been obtained, and in an analysis of the whole series 32 proved to be of this type. Of the 49 cases, regarded as non-tuberculous, 5 were primarily cardiac lesions, while the remainder were post-pneumonic. The tuberculous group is worthy of note. These cases could be divided into three fairly well-defined sections. There were in the first instance 17 children with infection of the hilum glands with little, if any, evidence of lung infiltration. Of this series 6 were uncomplicated, 4 had an additional pleurisy with effusion, and 4 had another tuberculous lesion such as tabes or a bone infection. In the remaining 3 patients the hilum condition was complicated by a non-tuberculous lung lesion such as bronchitis or post-pneumonic fibrosis. A second group consisted of 12 children with massive disease comparable to the adult type of tuberculosis, and in 8 of these abdominal or bone tuberculosis was also noted. 4 of this group died. The third section contained 3 patients with broncho-pneumonic tuberculosis complicated in 1 case by tabes, in another by Pott's disease, and in a third by meningitis; all proved fatal.

The treatment of the tuberculous patients was of necessity varied. A strict sanatorium régime was, wherever possible, maintained, and a few of the milder cases appeared to benefit from the cautious use of exercises as given to the post-pneumonic group. Since February, 1932, an attempt has been made to test the value of colloidal gold in children with established pulmonary tuberculosis. 2 intravenous preparations have been employed—Sanocrysin, the Danish product, and Crisalbine, which is supplied by May and Baker, and is said to be less toxic than the former drug. The group of dismissals under review contains 4 patients who received subsidiary treatment by this means, and in 2 of these marked general and local improvement was at the same time noted. Both had massive lesions. In a third case with broncho-pneumonic tuberculosis the disease rapidly progressed to a fatal termination in spite of the injections. The fourth patient was dismissed irregularly after only three injections had been given, and their effect was therefore doubtful.

2 of these children developed urticarial rashes; but in 1 the appearance of the eruption was accompanied by a permanent fall in temperature and pulse rate after eighteen months, during which an intermittent pyrexia had been almost continuously maintained.

The improvement in the general health of the tuberculous patients has been an outstanding feature.

The non-tuberculous patients followed a routine much as described in a previous report, general and symptomatic treatment being combined, where possible, with a course of graduated exercises designed to increase the tone of the respiratory muscles and to promote the formation of compensatory emphysema. Many of the children were infants and could not benefit from this régime. Results of hospitalization in the group were varied but on the whole good. A few cases of delayed resolution and pleural thickening were dismissed with no recognizable lesion; others with more established lung damage improved both generally and at the site of disease; the remainder, who usually presented extensive bronchiectatic and pleural lesions, benefited generally but made very little headway as regards their pulmonary condition. It does not appear that a short course of sanatorium treatment can have much effect on the severe post-pneumonic lesions, and these are the children in whom such improvement is most desirable.

Orthopædic Cases.—During the year co-operation with the Education Health Service in the treatment of deformed children was continued and extended. Dr. Dale made weekly visits to the Willowbank Orthopædic Clinic and with Dr. Bruce examined new cases and supervised the after-care of patients dismissed from hospital. At the Clinic arrangements for the supply and repair of splints and special boots were completed early in the year, and later plaster of Paris applications and surgical dressings were undertaken by the staff. The work of the clinic has already been described in Dr. Arbuckle Brown's report on the Medical Inspection and Treatment of School Children for the year ended 31st July, 1932.

37 patients who had been referred to hospital for treatment were dismissed during the year. Of these, 29 received surgical treatment, multiple operations being required in 22 cases. The deformity was much improved in 31 cases, improved in 4, and not improved in 2. 1 patient was dismissed irregularly. During residence all patients benefited greatly from the general hospital routine which differed in no way from that adopted for the tuberculous cases. Exercises, massage, and electrical treatment were carried out by the hospital masseuse staff.

In order to give some idea of the scope of the work undertaken, the operations carried out on the dismissed patients are enumerated in the following table:—

Disease.	Deformity.	Operation.	Nos.
Rickets, ...	Curvature of Tibia, ...	Cuneiform Osteotomy, ...	11
		Manipulation after Osteotomy, ...	1
	Genu Valgum, ...	Supracondylar Osteotomy, ...	2
Infantile Paralysis,	Flail Foot, ...	Stabilisation of Foot (Naughton-Dunn Operation), ...	9
	Pes Cavus, ...	Steindler's Operation, ...	5
	Talipes Equinus, ...	Lengthening of Tendo Achillis, ...	9
	Talipes Varus, ...	Transplantation of Tib. Anticus into 5th Metatarsal, ...	1
		Manip. with wrench, ...	1
	Pes Calcaneo-Cavus, ...	Transplantation of Tib. Posticus and Per. Longus into Os Calcis, ...	3
	Quadriceps Paralysis, ...	Transplantation of Semitendinosus and Biceps into Patella, ...	2
Spastic Paralysis,	Talipes Equinus, ...	Lengthening of T. Achillis, ...	6
	Pes Cavus, ...	Steindler's Operation, ...	2
	Hammer Toe, ...	Transplantation of Ext. Hall. Long. into 1st Metatarsal, ...	1
Congenital,	Talipes Varus (rigid), ...	Cuneiform Osteotomy of Tarsus, ...	3
Others, ...	Overlapping Toes, ...	Amputation of Toes, ...	2
Total, ...			58

The average duration of residence was 212 days. This lengthy residence is accounted for by the gross nature of the deformities present in most of the cases treated. Less severe types of deformity are now being selected for treatment.

TREATMENT.

In all cases of surgical tuberculosis the treatment was mainly along conservative lines. Exposure of the skin to the sunshine and to the atmosphere on the verandahs produced very pleasing results in every patient capable of responding, and during the summer months deep pigmentation appeared in many cases. In the bone and joint cases immobilisation was secured chiefly by the use of external splints. In the spine and hip cases reliance was placed on our special adjustable carriage which is giving great satisfaction in use and is nearing the end of its period of trial. Fifty-five carriages with the necessary fittings were constructed in the splint department during the year. This brought the total number available up to seventy. In the later stages of treatment plaster of Paris appliances were extensively used, over 400 plasters being applied during the year. Prior to dismissal certalmid or celluloid splints were fitted in most cases.

In all 66 of these were supplied. In knee-joint cases the Thomas walking caliper splint was preferred to the certalmid appliance, and 18 of these were made in the splint-room during the year. Abscesses were treated by aspiration and injection of modifying fluids, while sinuses, if not grossly infected, were treated by paste injections.

Plaster of Paris Work.—The work done in the plaster-room is indicated as follows:—Spinal jackets, 42; fillets, 3; hip spicas, single, 131; hip spicas, double, 13; leg splints, 180; arm splints, 19; bivalve splints, 12; ventral shells, 1; total, 401. In addition to these, 70 moulds were taken for plaster casts and 3 casts illustrating deformities of the feet were made.

The almost complete stoppage in the construction of ventral shells is the result of the very satisfactory fixation in the ventral position which can be secured on the adjustable carriage.

Splint Work.—In addition to the work carried out in the hospital, one splintmaker gave an afternoon each week to the repair of splints, alteration of boots, &c., at the Orthopædic Clinic. All minor repairs can be undertaken there and the unnecessary transport of patients to the hospital avoided. The work of the splintmakers is shown as follows:—Adjustable carriages and fittings, 55; certalmid splints, 60; celluloid splints, 6; wooden splints (posterior), 11; walking calipers, 18; bed Thomas splints, 2; crutches padded, 27; pattens fitted, 48; foot appliances (to prevent drop foot), 21; leather restrainers, 50; boots—soles raised, 28; bivalve splints finished, 17; repairs (various), 269; total, 612.

Operations.—During the year 339 operations were carried out under general anaesthesia. In recent years we have witnessed the swing of the pendulum from pure conservatism towards surgery in the treatment of bone and joint tuberculosis. One's fear is that the pendulum may swing too far. Though surgery has a well-defined place its scope in the case of children is limited. Operation is not a cure for tuberculosis, although in well-selected cases it may help materially towards that end. It cannot, however, take the place of sound general treatment. 92 operations were carried out in children with bone and joint lesions. These included excisions and arthrodesis of joints, 4; arthrotomy, 2; osteotomy, 11; tenotomy of hip adductors, 5; and removal of localised foci of disease, 12. In the cases of glandular disease operation was undertaken in 11, excision being carried out in 3. Few of the abdominal cases called for surgical intervention, operation being required in 5 cases only.

The high incidence of urinary calculi in patients undergoing prolonged recumbent treatment with the consequent decalcification of the osseous tissue is reflected in the relatively high number of operations for the removal of stones from the urinary tract. (Nephrolithotomy, 3; and ureterolithotomy, 2.) A large proportion of the surgical work of the hospital was in relation to the orthopædic cases for the treatment of which 94 operations were carried out. Tonsils and adenoids were removed in a series of 95 cases.

Dental Treatment.—The teeth in all cases were examined and the necessary treatment undertaken shortly after admission, usually while the patients were still in the isolation wards. Miss Gentles, L.D.S., visited the hospital weekly and carried out 312 extractions, general anæsthesia being required for 95 of these. Other extractions were undertaken by the medical staff.

Radiology.—During the year 1,240 patients were X-rayed, 2,221 skiagrams being taken. The Visiting Radiologist, Dr. F. L. Henderson, conducted 51 sessions and the hospital electrician undertook 42.

Laboratory.—Full use was made of the laboratory facilities for the diagnosis of infective conditions, and 759 specimens were examined. An investigation has been started into the types of tubercle bacilli associated with the forms of the disease which come under observation.

Education.—During the year the educational facilities were extended, and it may be stated that all educable children in hospital, except those suffering from pulmonary tuberculosis, were receiving instruction for a period of $2\frac{1}{4}$ hours daily. The average number of children on the register was 252, the average daily attendance being 232. The education of tuberculous children presents a difficult problem. Owing to prolonged illness, prior to admission, and consequent loss of opportunity they are usually backward. In hospital over 90 per cent. are confined to bed, and many are further handicapped by being partially immobilised in some form of splint or on a spinal carriage. The method of instruction must, therefore, be practically individual. Despite the disadvantages which they labour under, the progress made by the children was good. This section of the hospital work has not been recognised as education by the Department of Education for Scotland, but it is hoped that the position will be remedied at an early date. It has, however, been fortunate in receiving the most sympathetic encouragement from the Director of Education for the city and from his staff.

J. WILSON,
Physician Superintendent.

May, 1933.

BELLEFIELD SANATORIUM.

No alteration has been made in the method of classification of patients discharged from this sanatorium during 1932. The three divisions, "Early," "Intermediate," and "Advanced," form the basis of classification, as formerly. Full use has been continuously made of all available accommodation, and no difficulty has been experienced in maintaining maximum numbers. The number discharged during the year was 164, an increase of 3 over the previous year.

20 of the total number have been placed in the early group. Of these, 13 have made satisfactory progress and, could the necessary attention be vouchsafed in reasonable home conditions, there would be little fear of recrudescence of the disease. Too large a number discontinue treatment before the assurance can be given that the disease has ceased to be active.

124 have been classified as intermediate in type. In the main this group showed widespread lesions of varying degrees of activity. The majority may be said to have been affected over long periods. Rather more than half the total number were improved and fit on discharge, but in few could the disease be regarded as arrested. Of those discharged as unfit, continuous hospital treatment over long periods will ultimately be necessary as regards the great majority. 28 of those discharged had tubercle bacilli present in the sputum. Their potentialities as disseminators have not in any way been minimised by their period of treatment. This must be considered a disappointing feature. The proportion of intermediate cases dealt with continues to be very high. The possibilities of active treatment being undertaken in such are remote and when embarked on is necessarily hazardous.

20 cases of a distinctly advanced type were dealt with. 2 deaths occurred in this group. 11 were transferred to hospital, the remainder preferring to return to their homes. Only 3 showed some improvement during residence in the sanatorium.

The number of beds available for children remained at 26 as in past years, and undoubted benefit accrued to those who were dealt with.

Treatment remained essentially general. Induction of artificial pneumothorax in such cases as thought to be suitable was carried out. 21 inductions were attempted. 2 proved unsuccessful, 2, of necessity, had to be abandoned, and the remainder were considered successful up to varying degrees. Even in those patients where only a slight degree of collapse of lung could be maintained decided benefit was apparent. 390 refills were given. The blood sedimentation test was carried out periodically on all cases admitted and all sputa were examined monthly for tubercle bacilli.

The general health of the staff was maintained at a high standard throughout the year.

A. YOUNG,
Physician Superintendent.

BELLEFIELD SANATORIUM. — TUBERCULOSIS. — TABLE
SHOWING STAGE OF DISEASE, AGE, RESULT OF TREATMENT,
&C., OF PATIENTS DISMISSED DURING YEAR 1932.

Age Group.	Result of Treatment.						Work or School.	Reasons for Dismissal.			Result of Sputum Examination.					Complications.				
	Arrested.	Much Improved.	Improved.	Not Improved.	Died.	Less than 4 Weeks.		Fit.	Unfit.	Own accord.	Other reasons.	Transferred.	Admitted +. Discharged +.	Admitted +. Discharged -.	Admitted -. Discharged -.	Admitted -. Discharged +.	No Spit.	Tubercular.	Other.	Totals.
Early Cases—																				
— 5, ...	—	1	—	—	—	—	1	—	1	—	—	—	—	—	—	1	—	—	1	
— 10, ...	—	6	3	—	—	—	8	1	5	3	1	—	—	1	—	8	1	—	9	
— 15, ...	—	5	—	—	—	—	5	—	3	2	—	—	—	1	—	4	—	—	5	
— 20, ...	—	1	—	1	—	1	2	—	1	1	—	—	—	—	—	2	—	—	2	
— 25, ...	—	—	2	—	—	1	2	—	1	1	—	—	—	—	—	2	—	—	2	
— 35, ...	—	—	1	—	—	—	1	—	1	—	—	—	—	—	—	1	—	—	1	
Totals, ...	— 13	6	1	—	—	2	19	1	12	7	1	—	—	2	—	18	1	—	20	

Intermediate—																			
—15, ...	—	1	3	3	—	—	4	3	6	1	—	1	1	2	—	3	—	—	7
—20, ...	—	8	14	10	—	2	18	14	18	12	2	5	3	6	—	18	—	—	32
—25, ...	—	8	25	4	—	—	21	16	24	12	1	9	3	13	—	12	—	—	37
—35, ...	—	7	18	4	—	—	18	11	20	6	3	7	3	4	—	15	—	—	29
—45, ...	—	4	10	3	—	—	11	6	10	7	—	4	3	7	—	3	—	—	17
—55, ...	—	—	1	1	—	—	1	1	1	—	1	2	—	—	—	—	—	—	2
Totals, ...	—	28	71	25	—	2	73	51	79	38	7	28	13	32	—	51	—	—	124

Advanced—																	
—15, ...	—	—	1	3	—	—	—	4	1	—	3	3	1	—	—	—	4
—20, ...	—	—	1	4	1	—	—	6	—	2	4	4	1	1	—	—	6
—25, ...	—	—	1	5	1	—	—	7	4	1	2	6	1	—	—	—	7
—35, ...	—	—	—	3	—	—	—	3	1	—	2	2	—	1	—	—	3
Totals, ...	—	—	3	15	2	—	—	20	6	3	11	15	3	2	—	—	20

Class.		Number Dismissed.	Number of Deaths.	Duration of Residence—Days.						
				—30	—50	—100	—150	—200	—300	+300
Early, ...	...	20	—	1	1	1	—	3	4	10
Intermediate, ...	...	124	—	9	9	18	—	49	18	21
Advanced, ...	...	20	2	1	—	2	—	2	1	14
Totals, ...		164	2	11	10	21	—	54	23	45

PART III.

GENERAL HOSPITALS

AND

OUTDOOR MEDICAL SERVICES.

Introduction.—In the Annual Report for 1931 a detailed review was given of the accommodation, scope, staffing, and functions of the general hospitals and of the outdoor medical services previous to the passing of the Local Government Act, 1929. The Report also described the changes effected following the transfer of these services to the Corporation. No material alterations have since been made. The principal feature of the year under review was the marked increase in the demand on both of these branches of medical work, largely owing to the present economic situation. During the past years the calls on the hospitals and on the district medical officers have been steadily increasing, and in 1932 gave rise to a heavy tax on the resources of both services (see Chart, page 341). This demand on the medical services has a direct relationship to the high continued unemployment in the City, with its corresponding increase in the numbers in receipt of public assistance. The number of unemployed in Glasgow during 1932 was considerably in excess of that of the previous year. The numbers in receipt of poor relief increased throughout the year as the following table shows. The figures are expressed as a rate per 10,000 of the population:—

Month.		Glasgow.	Month.		Glasgow.
January,	...	758	July,	...	869
February,	...	788	August,	...	892
March,	...	809	September,	...	923
April,	...	829	October,	...	927
May,	...	868	November,	...	953
June,	...	834	December,	...	961

The figures given include dependants and show the number of persons relieved on one day in each month, e.g., 15th of the month. They include indoor and outdoor relief.

Pathological Department.—The following table shows the work of the Pathological Department during the year:—

Pathology—

Autopsies, ...	183
Reports issued to Wards (Specimens), ...	177

Bacteriology—

Reports issued to Wards (Specimens), ...	3,210
Wassermann Reactions, ...	4,601

Biochemistry—

Reports issued, ...	981
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Refereeing of Cases.—As was explained in the Annual Report for 1931, the staffs and facilities of the hospitals are at the disposal of the Outdoor Medical Officers for the purposes of refereeing cases. The patients are examined at Stobhill Hospital by a small board, consisting of the appropriate registrar and another medical officer. During the year 713 special cases were dealt with by the Board, and, in addition, 113 disability pensioners were assessed.

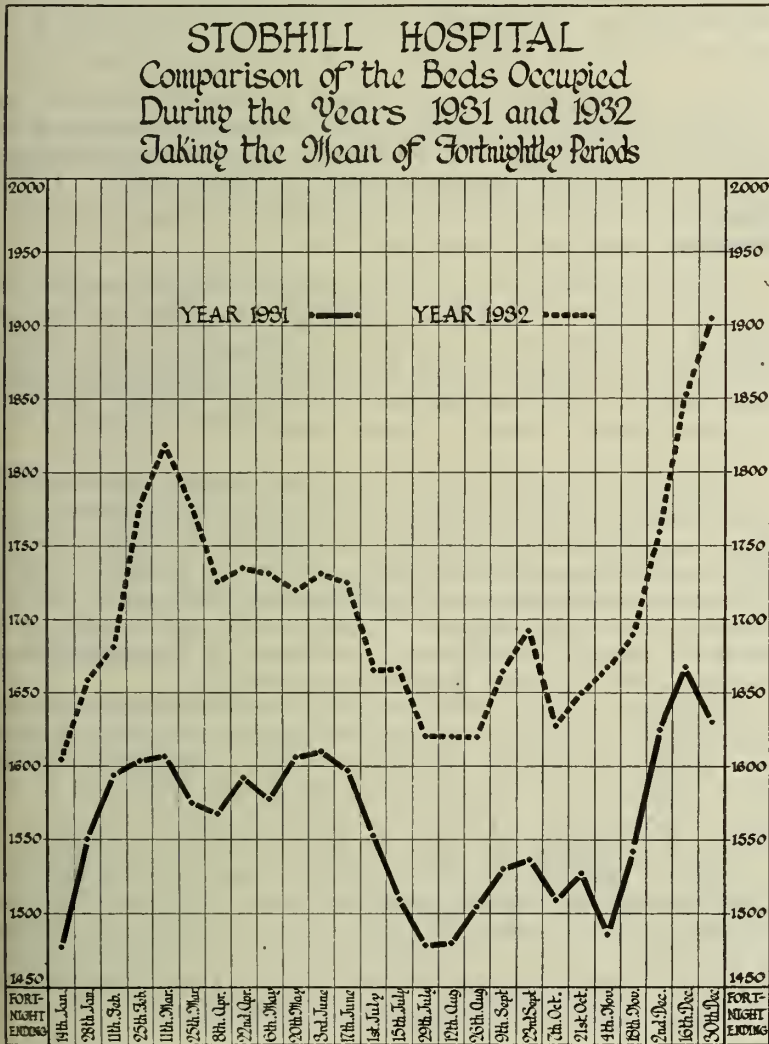
Hospital Statistics.—The method now adopted of obtaining statistics of the work done by the General Hospitals was detailed in last year's Report. A case summary card with the necessary information is completed by the hospital staffs in respect of each patient dismissed. The details from these cards are thereafter punched on Hollerith cards and the data mechanically tabulated.

During the year 26,743 patients were dismissed or died, a total considerably in excess of the number treated during the previous year. The following comparison of the admissions and discharges with those of 1931 illustrates this increased work:—

TABLE SHOWING COMPARISON OF ADMISSIONS, DISMISSALS, DEATHS, AND IN-PATIENT DAYS IN CORPORATION GENERAL HOSPITALS DURING 1931 AND 1932.

Hospital.	Year.	Admissions.	Dismissals.	Deaths.	Average Days' Residence.	Percentage Increase of Admissions in 1932 over 1931.
Stobhill, ...	{ 1931	11,266	9,677	1,484	50·99	26·1
	{ 1932	14,213	12,255	1,718	44·73	
Eastern District, ...	{ 1931	3,225	2,880	348	30·72	15·3
	{ 1932	3,720	3,354	364	27·40	
Western District, ...	{ 1931	4,168	3,925	238	19·76	20·97
	{ 1932	5,042	4,708	334	16·99	
Southern General, ...	{ 1931	3,483	2,864	686	57·56	17·0
	{ 1932	4,077	3,331	679	49·32	
Totals, ...	{ 1931	22,142	19,346	2,756	43·20	22·17
	{ 1932	27,052	23,648	3,095	37·78	

The admissions during 1932 show a percentage increase of 22.17 over those of the previous year. As might be expected, Stobhill Hospital, being the largest of the institutions, bore the brunt of the work, taking in fact more than 50 per cent. of the total cases admitted. In this hospital the greatest number of patients on any given date was 1,956 on 23rd December, which compares with 1,699, the greatest number in 1931.



The actual figures relating to the dismissals from the hospitals during the year are shown in Tables I and II. The

classification of diseases in Table I is that required by the Department of Health for general hospital returns, and shows the number of cases dismissed from each hospital in disease groups, together with the percentage of cases in each class, the average days' residence, and the percentage of hospital accommodation occupied by the various disease groups. Table II is the more extended classification which has been adopted for tabulation of the cases dismissed from the General Hospitals. The method of admission and the disposal of the patients dismissed during the year are set out in Tables III and IV.

These tables which now appear for the second year are extremely valuable as indicating the volume and nature of the sickness and invalidity with which the hospitals are called upon to deal. They will afford material for future study. In the meantime a few notes are given regarding certain groups of affections.

Acute infectious diseases accounted for 0·68 per cent. of the dismissals from the four General Hospitals. This is a decrease from the previous year and may be explained by the absence of measles in epidemic form in the city. As in former years most cases of infectious disease occurred in Stobhill Hospital, in which there is always a larger proportion of children.

There was a considerable increase in cases of influenza, 387 cases being treated, as compared with 193 in the previous year. This increase was associated with an epidemic of influenza in the City towards the end of the year. A ward in Stobhill Hospital is devoted to the treatment of pulmonary tuberculosis, and the numbers show little change. These patients are usually in an advanced stage of the disease. Treatment by the induction of pneumothorax has been increasingly used.

Malignant disease makes considerable demand on accommodation, and no less than 529 cases were under treatment—a figure very similar to that on the previous year. Malignant disease of the digestive system accounted for a little over half of the cases in this group. The case mortality was 63·7 per cent., as compared with 65·3 per cent. in 1931. All such treatment is applied at Stobhill Hospital, suitable cases being transferred there from the other three general hospitals. There were 35 cases of tumours of the central nervous system, with 18 deaths. Many of these were of the nature of brain tumours and are the subject of a special research by the Visiting Surgeon to Stobhill Hospital in concert with the radiologist and pathologist.

A paper was published by a member of the staff on the pathological findings in tumours of the brain, and many lectures

and demonstrations have been given throughout the year. The extent of the work and the results obtained may be illustrated as follows:—

BRAIN OPERATIONS, 1932.

	No. of Cases.	No. of Operations.	Recovered.	Improved.	I.S.Q.	Died.
I. <i>Verified Brain Tumours</i> —						
(1) Gliomas, ...	4	4	1	1	—	2 ¹
(2) Pituitary Adenomas,	4	5	3	—	—	1
(3) Meningiomas, ...	4	5	3	1	—	—
(4) Craniopharyngiomas,	1	1	—	1	—	—
(5) Tuberculomas, ...	1	1	1	—	—	—
Total, ...	14	16	8	3	—	3
II. " <i>Tumour Suspects</i> " and <i>Allied Conditions</i> —						
(1) Cisternal Arachnoiditis,	5	6	4	—	—	1
(2) Traumatic Epilepsy, ...	2	3	1	1	—	—
(3) Cerebral Vascular Disease, ...	1	1	—	1	—	—
(4) Tumour Suspects and Miscellaneous, ...	3	3	—	—	2	1
Total, ...	11	13	5	2	2	2
III. <i>Brain Abscess</i> , ...	1	1	—	—	—	1 ²
IV. <i>Trigeminal Neuralgia</i> , ...	3	3	2	—	—	1 ³
Grand Total, ...	29	33	15	5	2	7

¹The two fatal glioma cases recovered from their operations, but died some weeks later from the continued growth of the inoperable tumours.

²This case was dismissed apparently well, and should not perhaps be classed as a fatal case. He was readmitted, however, with a recurrence of symptoms, and died after a second operation.

³A fatality from sudden cardiac failure in an old woman of 73 years with very marked arterio-sclerosis, two days after operation.

There was a considerable increase in the number of cases of acute rheumatism treated during the year. Under this classifica-

tion are included 428 cases, which is more than a hundred over last year's figure. Of these, 153, or 35·7 per cent., were under 16 years of age. As might be expected, females were in the majority, accounting for 60·3 per cent. of all cases. Chronic rheumatism accounted for 652 cases. The majority of the 96 cases of venereal disease were in the late or tertiary stages of syphilis.

As regards the mental observation wards, 1,045 cases of mental disease were treated in the general hospitals during the year, with an average in-patient stay of 59·1 days. These figures show little change from those of the previous year. The great majority, almost 90 per cent., of the total mental cases were treated in the observation wards of Stobhill and the Eastern District Hospitals. The trend of modern practice is to avoid, if possible, the formal certification as insane of patients suffering from mental disorders, and, in this connection, the mental observation wards of the general hospitals play an increasingly important part. This may be exemplified in the following table:—

	1930.	1931.	1932.
Percentage of mental cases dismissed to asylums, ...	45·79	38·5	35·69
Percentage of mental cases dismissed to their own homes, ...	46·0	51·0	54·26

The percentage of cases successfully treated and discharged to their own homes has steadily increased within the last few years, while there has been a corresponding decrease in those certified as insane and transferred to the asylums. A considerable and sometimes serious strain has been thrown on the accommodation in pursuit of this policy.

There were under treatment 534 cases of "senility," a decrease from the previous year. The average duration of residence of such cases was also reduced, being 78·3 days, as compared with 84·4 days in the previous year.

Under the classification "violence" are included accidents and injuries, and, in addition, patients admitted after poisoning. There were 567 cases in this group, of which 227, or some 40 per cent., were fractures. Accidents and injuries accounted for 42 deaths. The situation of the Western District Hospital seems to favour the admission of cases of injury to that institution.

Diseases of the central nervous system accounted for 1,910 patients, or 7·14 per cent., of the total dismissals, figures similar

to those of previous years. Cases of syphilis of the central nervous system showed a considerable increase, there being 165 during 1932, as against 110 last year.

A very marked increase in patients suffering from diseases of the respiratory system was experienced. The total number in this group was 3,823, which is 945 more than in 1931, and accounted for 14·3 per cent. of all diseases treated in the hospitals. Most of the increase occurred in Stobhill Hospital, where 736 more cases were dismissed than in the previous year. In fact, the increase in respiratory disease, together with the demand on the maternity beds, gave rise to considerable difficulty in the administration of this hospital. Of the diseases included in the respiratory group acute pneumonia showed the greatest increase, 453 more cases being treated during 1932 than in the previous year. An increase was also noted in patients suffering from acute and chronic bronchitis, but to a lesser extent. The following table shows the number and age distribution of the patients treated for acute respiratory diseases in 1932:—

ACUTE PNEUMONIA AND ACUTE BRONCHITIS.

DISMISSALS AND DEATHS IN THE GENERAL HOSPITALS DURING THE YEARS 1931 AND 1932.

Age Distribution.	Acute Pneumonia.				Acute Bronchitis.			
	Cases. 1931.	Deaths. 1931.	Cases. 1932.	Deaths. 1932.	Cases. 1931.	Deaths. 1931.	Cases. 1932.	Deaths. 1932.
Not stated, ...	1	—	—	—	2	—	—	—
— 1 year, ...	98	59	269	171	111	4	219	26
— 3 years, ...	158	64	258	86	109	6	194	2
— 5 years, ...	33	5	83	4	31	1	104	—
— 16 years, ...	82	2	168	12	89	—	98	—
— 25 years, ...	37	6	50	10	59	1	54	—
— 35 years, ...	29	10	59	22	112	1	101	3
— 45 years, ...	44	20	53	25	114	3	59	1
— 65 years, ...	89	56	97	66	72	7	78	8
— 75 years, ...	52	43	37	30	18	8	13	3
+ 75 years, ...	14	11	16	14	6	2	4	2
Total, ...	637	276	1,090	440	723	33	924	45

Diseases of the circulatory system occupied 7 per cent. of the accommodation. A total of 1,390 cases were treated, with

532 deaths. Valvular disease of the heart accounted for more than half, with a case mortality of 36·4 per cent. Myocarditis, often associated with other conditions, and arterio-sclerosis made up the majority of the remainder of this group.

As in previous years, diseases of the digestive system showed the highest frequency, representing 15·09 per cent. of all the cases treated. Included in this figure, however, are 1,420 children of school age admitted to the Western District Hospital for removal of tonsils and adenoids, under the Education Act. There were 118 cases of appendicitis treated, including 91 operations, as also 173 patients with hernia. Enteritis and diarrhoea accounted for 383 cases, with 135 deaths. The great majority of these patients were under one year of age and were treated in Stobhill Hospital. There was a considerable increase in caries and dental diseases, 579 cases being treated, as against 315 in the previous year. Diseases of the skin accounted for 856 patients—an increase on the previous year's figures. Scabies and other parasitic skin diseases, chiefly in children, totalled 251 cases, and the fact that the average in-patient stay was 63·4 days indicates that a considerable amount of the hospital accommodation is occupied by diseases of this nature.

Patients classed as showing no appreciable disease, who numbered 1,009, and accounted for 3·7 per cent. of the total dismissals, were chiefly children under 16 years of age, largely made up of those admitted for economic or other reasons. The average stay in hospital as regards this group was 51·4 days, and they occupied about 5 per cent. of the total accommodation.

Surgical Operations.—The number and nature of the operations performed in the general hospitals during the year are shown in Table V. A somewhat more extended classification has been used this year than formerly in order to bring into relief the number of operations performed for certain conditions, a knowledge of which might be of administrative importance. Thus, appendicectomy, operations for varicose veins, and hæmorrhoids, and operations for the induction of pneumothorax are now shown under separate headings. In addition, a separate grouping has been added for treatment by diathermy.

The total number of operations performed during the year was 6,074. As in previous years, operations for the removal of tonsils and adenoids, dental operations, and operations for gynaecological and obstetrical conditions were in the majority.

Electro-Medical Department.—The undernoted table shows the work done in the Electro-Medical Department of Stobhill Hospital:—

Number of radiographic films taken,	...	...	...	7,028
Do. barium meals given,	...	...	...	529
Do. deep X-ray therapy treatments,	...	...	...	546
Do. cases treated by radium,	...	...	...	51
Do. sunlight treatments given,	...	...	...	3,042
Do. cases treated by massage,	...	...	...	1,473
Do. massage treatments given,	...	...	...	14,273
Do. cases treated by electricity,	...	...	...	173
Do. electrical treatments given,	...	...	...	3,091
Total treatments given,	...	...	...	21,003

Deaths.—There were 3,095 deaths, giving a case mortality of 11·6 per cent., which compares with 2,756 deaths and a case mortality of 12·5 per cent. in the previous year. It may be pointed out that 556 deaths, or 18 per cent. of the total, occurred within 48 hours of admission to hospital. The main causes of death of the patients dying shortly after admission may be shown as follows:—

Cause of Death.	No. of Deaths.
Acute Pneumonia,	123
Acute Bronchitis,	14
Chronic Bronchitis,	44
Cardiac Disease, ...	98
Cerebral Hæmorrhage or Thrombosis, ...	35
Diseases of the Digestive System,	44
Malignant Disease,	20
Violence, ...	13
Congenital Debility and other Diseases of Early Infancy, ...	14
Other Causes,	151
Total,...	<u>556</u>

OBSTETRICAL SECTION.

The increasing importance of the work done by the Obstetrical Sections of the general hospitals within recent years has been commented upon in previous annual reports. During the past year the accommodation for this type of case has been even more severely taxed than in former years, a circumstance which has almost certainly a direct relationship with the present industrial depression. A total of 3,593 cases were treated in the obstetrical wards, an increase of 1,116 on the number for the previous year. In 1930 the average in-patient's stay for obstetrical cases was

18·2 days, in 1931 it was 17·4 days, while in the year under review the average stay was 16·4 days. The following table shows the nature and extent of the work done in the maternity wards :—

GENERAL HOSPITALS.—OBSTETRICAL SECTIONS.

DISMISSALS DURING 1932.

	Stobhill Hospital.	Eastern District Hospital.	Western District Hospital.	Southern General Hospital.	Total.
<i>Cases Delivered in Hospital—</i>					
Dismissed well, ...	1,266	393	574	136	2,369
Died, ...	18	2	6	1	27
Transferred, ...	14	10	7	3	34
Total dismissals of cases delivered in hospital, ...	1,298	405	587	140	2,430
<i>Method of Admission of above Cases—</i>					
Admitted during ante-natal period for treatment and delivered in hospital, ...	42	21	12	41	116
Admitted to labour ward, ...	375	367	515	91	1,348
Admitted to labour ward (via Glasgow Royal Maternity Hospital),	881	17	60	8	966
Total, ...	1,298	405	587	140	2,430
<i>Cases admitted during ante-natal period,</i>					
Dismissed undelivered, ...	250	83	113	71	517
<i>Cases admitted after delivery,</i>					
Abortions and miscarriages, ...	276	110	112	99	597
Infants dismissed alive, ...	1,195	374	539	134	2,242
„ still-born, ...	61	21	39	7	128
„ neo-natal deaths, ...	51	13	18	4	86
Total, ...	1,307	408	596	145	2,456

Of the total patients treated, 1,927, or 53·6 per cent., were cases of normal parturition. The average duration of stay in hospital of such cases was 13·5 days, which may be compared with 15·9 days in the previous year. As will be seen from the

table, cases transferred from the Royal Maternity Hospital by previous arrangement formed a substantial proportion of the whole. It is important to observe that some 14 per cent. of the total obstetrical cases were patients admitted for conditions arising during pregnancy and dismissed undelivered from hospital. The conditions for which these patients received treatment may be illustrated in the following table:—

REASON FOR ADMISSION OF CASES ADMITTED TO ANTE-NATAL
WARD AND DISMISSED UNDELIVERED.

Toxaemias of Pregnancy—

Hyperemesis, ...	36
Albuminuria, ...	74
Eclampsia, ...	1
	111

Abnormal Presentation or Disproportion—

Breech Presentation, ...	9
Transverse Presentation, ...	1
Twin Pregnancy, ...	2
Contracted Pelvis, ...	6
Large or Abnormal Child, ...	1
	19

Concurrent Diseases independent of Pregnancy—

Cardiac Disease, ...	14
Renal Disease, ...	15
Pulmonary Tuberculosis, ...	2
Other Respiratory Diseases, ...	45
Other Diseases, ...	114
	190

Other Reasons, ... 197

Total, ... 517

Conditions associated with pregnancy or concurrent diseases independent of pregnancy accounted for 320 of the cases in this group. A considerable number (197 cases) is shown as receiving attention during the ante-natal period for reasons other than the above. Many of these were admitted in false labour or threatened abortion, but in a proportion social or economic reasons were the cause of admission. In the ante-natal wards, 116 patients were treated and delivered in hospital, the average stay being 49·5 days. Toxaemias of pregnancy were the reason for admission in 53·3 per cent. of this group, and concurrent diseases independent of pregnancy in 31·4 per cent., the

remainder being mainly instances of malpresentation or contracted pelvis.

The complications of pregnancy or parturition noted in 189 cases were as follows:—

Toxæmias of Pregnancy, ...	83
Abnormal Presentation, ...	32
Disproportion, ...	34
Placenta Prævia, ...	17
Others, ...	23
Total, ...	189

A little over four per cent. of the total obstetrical cases were suffering from concurrent diseases unassociated with pregnancy. Of the 148 patients in this group, pulmonary tuberculosis was present in 22 cases, cardiac disease in 13, renal disease in 15, other respiratory diseases in 34, and other conditions in 74.

The following table shows the incidence of puerperal fever and pyrexia, together with septic and non-septic deaths in the maternity wards:—

HOSPITAL.	No. of Cases.		Cases per 1,000 Births.		No. of Deaths.		Deaths per 1,000 Births.		Case Mortality.
	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Non-Septic.	Fever.	Non-Septic.	Fever.
Stobhill, ...	30	32	22·9	24·5	4	17	3·1	13·0	13·3%
Eastern District,	10	3	24·5	7·4	1	3	2·4	7·2	10·0%
Western District,	14	6	23·5	10·1	3*	6	5·0	10·1	21·4%
Southern General,	4	3	27·6	20·7	1*	3	6·9	20·7	25·0%
	58	44	23·6	17·9	9	29	3·7	11·8	15·5%

* Includes cases dismissed but died in Infectious Disease Hospital after transfer.

The total number of deaths associated with pregnancy was 43, of which 16 were cases of sepsis. Seven of these deaths have not been included in the table as the patients were delivered outside and were not associated with the hospitals in so far as obstetrical treatment was concerned. Of the nine cases of sepsis dying in the general hospitals, one died of sepsis following Cæsarean section for complicated breech presentation with fibro-myoma; four were abortions which became septic; and four were more or less normal confinements. Of the 29 non-septic deaths, four were due to pulmonary tuberculosis, Cæsarean section having been performed in one; six were due to pneumonia; eight

resulted from toxæmias of pregnancy, two dying undelivered; three were due to cardiac disease; two followed severe hæmorrhage from placenta prævia; and the remainder were caused by adenocarcinoma of the breast with liver metastasis, acute mastoiditis with lateral sinus thrombosis, pernicious anæmia, severe post-partum hæmorrhage, sub-total hysterectomy, and another died the day after admission from shock following incomplete abortion.

Obstetrical Operations.—A total of 816 obstetrical operations were performed in the hospitals, as follows:—

Craniotomy.	Cæsarean Section.	Forceps Delivery.	Induction of Labour.	Manual Removal of Placenta.	Curettage.	Perineal Repair.	Other.
3	33	68	11	123	343	210	26

The majority were either for manual removal of the placenta or curettage, most of which were associated with abortions or miscarriages.

Ante-natal Supervision.—Of the total obstetrical cases treated in the hospitals, 30·3 per cent. had received no ante-natal supervision. Of the remainder, 26·8 per cent. had attended one or other of the Corporation Ante-natal Clinics; 22·8 per cent. had attended the Ante-natal Clinic of the Maternity Hospital; and the remaining 7·3 per cent. were under the ante-natal supervision of their own doctor. It is, of course, impossible to estimate the sufficiency of the ante-natal treatment received by these patients, but it is interesting to note that some 70 per cent. of the total cases treated had received some advice before parturition. In this connection, it may be observed that 1,122 cases, or 31·2 per cent., of the total were admitted in their first pregnancy, while 116 patients had had 10 or more previous pregnancies. Of the total cases treated, a persistent occipito-posterior presentation was found in 16 cases; in 3 a brow or face; in 88 a breech presentation; and in 8 the presentation was transverse. There were, in addition, 24 twin pregnancies.

Neo-natal Deaths.—There was a total of 86 neo-natal deaths and 128 children were still-born.

OUTDOOR MEDICAL SERVICES.

The increased duties thrown upon the District Medical Officers are revealed in the following comparison with 1931:—

	Visits.	Consultations.
1931, ...	23,230	113,217
1932, ...	30,159	148,307

Consultations showed an increase of 31 per cent. and visits of almost 30 per cent. on the previous year. As usual, the heaviest months, as far as visits and consultations are concerned, were the first three and the last three, the amount of work during the middle six months being on the average about 30 per cent. less. During the month of December, owing to the influenza epidemic, the number of visits was almost doubled. The medical officers performed 1,875 vaccinations, 1,891 were postponed through illness, and 189 cases were returned as insusceptible to vaccination. In addition, 1,368 statutory quarterly visits were paid to boarded-out mental defectives.

Out-Patient Clinics.—Details were given in the Annual Report for 1931 regarding the nature and extent of the work done by the out-patient clinics at the general hospitals, chiefly the Western District Hospital. During the year, 7,647 persons were examined and treated at these clinics, and there was a total of 28,471 attendances.

Dental Treatment.—A total of 216 persons were supplied with artificial dentures under the Poor Law after approval. The cost of this service was £1,054 5s. 3d., the average cost per applicant being £4 17s. 7d.

Nursing Services.—The experimental nursing service which was reported upon in the Annual Report for 1931 has not been resumed. Two of the nurses have, however, been transferred to the outdoor dispensaries at Abbotsford Place and Govan Town Hall, where they assist the district medical officers in the routine medical and minor surgical work.

TABLE I.—GENERAL HOSPITALS.—NUMBER OF CASES DISMISSED FROM EACH HOSPITAL FOR THE YEAR ENDED 31ST DECEMBER, 1932, ARRANGED ACCORDING TO DISEASE AND SEX.

DISEASES (Short Classification).	STOBHILL.		EASTERN DISTRICT.		WESTERN DISTRICT.		SOUTHERN GENERAL.		TOTALS.		Percentage of Total Cases dealt with.	Average Days' Residence.	Percentage of Hospital Accommodation Occupied.																			
	Males.		Males.		Males.		Males.		Males.																							
	Females.	Total.	Females.	Total.	Females.	Total.	Females.	Total.	Females.	Total.																						
Acute Infections, ...	68	69	137	6	4	10	8	6	14	8	13	21	90	92	182	15.2	0.27															
Influenza, ...	121	61	182	52	24	76	36	19	55	39	35	74	248	139	387	1.45	16.7															
Tuberculosis, respiratory, ...	145	37	182	20	5	25	23	12	35	53	34	67	241	68	309	1.15	103.3															
" non-respiratory, ...	52	35	87	13	4	17	8	6	14	12	9	21	85	54	139	0.52	142.3															
Malignant disease, ...	206	183	389	22	14	36	19	18	37	43	24	67	290	239	529	3.11	3.11															
Rheumatism, acute, ...	83	153	236	32	32	64	11	20	31	44	53	97	170	258	428	1.60	55.3															
" muscular, &c., ...	102	78	180	54	20	74	36	23	59	66	54	120	258	175	433	1.62	31.5															
" chronic arthritis, ...	55	44	99	25	8	33	27	12	39	25	23	48	132	87	219	0.82	110.7															
Veneral, ...	33	31	64	6	2	8	4	5	9	6	9	15	49	47	96	0.36	112.0															
Pregnancy and diseases connected with child bearing, ...	—	1,855	1,855	—	600	600	—	821	821	—	317	317	—	3,593	3,593	13.44	16.4															
Congenital debility and other diseases of early infancy and malformations, ...	99	70	169	52	7	12	24	20	44	18	8	26	146	105	251	0.94	51.1															
Mental, ...	279	287	566	202	170	372	2	3	5	50	52	102	533	512	1,045	3.91	59.1															
Senile decay, ...	125	152	277	35	20	55	29	24	53	87	62	149	276	258	534	2.00	78.3															
Violence, ...	106	74	180	44	31	75	119	69	188	72	52	124	341	226	567	2.12	33.8															
<i>Diseases not included in above—</i>																																
Nervous system, ...	695	520	1,215	111	69	180	112	61	173	197	145	342	1,115	795	1,910	7.14	79.6															
Respiratory system, ...	1,149	958	2,107	332	166	498	287	177	464	462	292	754	2,230	1,593	3,823	14.30	33.0															
Circulatory system, ...	319	281	600	129	71	200	124	65	189	261	140	401	833	557	1,390	5.20	52.7															
Digestive system, ...	834	436	1,270	347	199	546	925	880	1,805	260	154	414	2,366	1,669	4,035	15.09	16.7															
Genito-urinary system, ...	178	249	427	66	145	211	46	151	197	83	91	174	373	636	1,009	3.77	33.9															
Skin, ...	416	279	695	3	5	8	4	4	8	101	44	145	524	332	856	3.20	58.9															
Other diseases, ...	512	437	949	119	89	208	127	90	217	155	142	297	913	758	1,671	6.24	48.3															
No appreciable disease, ...	458	403	861	13	10	23	18	10	28	59	38	97	548	461	1,009	3.77	51.4															
Born in hospital, ...	678	568	1,246	190	197	387	267	290	557	77	61	138	1,212	1,116	2,328	8.70	14.0															
															6,713	7,260	13,973	1,826	1,892	3,718	2,256	2,786	5,042	2,178	1,832	4,010	12,973	13,770	26,743	100.00	38.45	100.00

AL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER, 1932.

PS.

	-45		-65		-75		+75		Total.		Grand Total.	Deaths.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	Total.
9	121	57	55	25	7	7	4	4	248	139	387	23	8	31
	5	13	8	6	4	3	1	2	90	92	182	4	3	7
	56	73	23	28	3	1	2	—	170	258	428	1	7	8
	7	5	6	1	1	1	—	1	42	29	71	3	2	5
	17	16	16	14	—	2	—	—	49	47	96	2	1	3
104	25	79	21	11	—	1	1	1	241	68	309	99	22	121
29	8	11	5	1	1	1	—	—	85	54	139	28	17	45
	43	16	68	29	11	24	3	11	132	87	219	7	11	18
118	62	94	67	27	28	5	10	258	175	433	—	1	1	
	1	—	—	2	—	—	—	—	3	2	5	—	—	—
	29	8	6	2	3	—	1	2	152	99	251	—	—	—
	27	59	77	64	19	45	3	12	147	202	349	14	47	61
	—	—	1	—	—	—	—	—	2	—	2	—	—	—
	7	8	7	5	1	—	—	—	18	17	35	12	6	18
6	2	27	4	16	3	3	1	53	10	63	44	8	52	
12	12	91	53	57	26	21	5	182	96	278	122	60	182	
1	1	9	2	3	1	1	—	14	4	18	9	2	11	
—	17	—	37	—	9	—	—	—	64	64	—	29	29	
—	2	—	17	—	7	—	3	—	30	30	—	21	21	
2	3	7	5	9	5	3	4	23	18	41	15	9	24	
	7	3	2	1	2	1	—	2	16	9	25	—	1	1

TABLE II.—NUMBER OF DISMISSALS AND DEATHS IN THE CORPORATION

DISEASES.	Not Stated.		-1		-3		-5		M.
	M.	F.	M.	F.	M.	F.	M.	F.	M.
<i>Diseases of the Nervous System—</i>									
Syphilis, including G.P.I. and tabes,	—	—	—	—	—	—	—	—	1
Cerebral hæmorrhage, embolism, and thrombosis, ...	—	—	—	—	—	—	—	—	—
Epilepsy, ...	—	—	—	—	—	—	1	1	17
So-called functional diseases of central nervous system, <i>e.g.</i> neurasthenia,	—	—	—	—	—	—	—	—	1
Post-poliomyelitis anterior, ...	—	—	—	—	—	2	—	—	—
Post-encephalitis lethargica, ...	—	—	—	—	—	—	—	—	1
Insanity (all mental cases), ...	—	1	—	—	—	—	—	—	1
Idiocy, imbecility, feeble mindedness,	—	1	—	—	2	2	2	3	24
Meningitis (not C.S.F. or tubercular meningitis),... ..	—	—	2	3	1	2	1	—	—
Other diseases of central nervous system,	—	—	—	—	1	—	—	—	6
Diseases of the peripheral nervous system,	—	—	—	—	—	—	—	—	1
Diseases of the eye, ...	—	—	4	4	7	8	7	5	14
Diseases of the throat and nose, excluding infection of or hypertrophy of tonsils and adenoids, ...	—	—	1	—	2	1	—	—	21
Diseases of the ear, ...	—	—	4	3	11	11	1	4	29
<i>Diseases of the Circulatory System—</i>									
Valvular heart disease, ...	—	—	—	—	—	—	1	—	2
Other heart disease, ...	—	—	—	—	—	—	—	—	1
Arterio-sclerosis, ...	—	—	—	—	—	—	—	—	—
Varicose veins and varicose ulceration of legs, ...	—	—	—	—	—	—	—	—	—
Other diseases, ...	—	—	—	—	—	—	—	—	—
<i>Diseases of Respiratory System—</i>									
Pneumonia—acute, ...	—	—	139	130	127	131	41	42	96
Bronchitis—acute, ...	—	—	114	105	96	98	52	52	52
Chronic bronchitis, including asthma and other complications, ...	—	—	1	—	5	—	—	—	10
Other diseases, ...	—	—	—	—	3	3	2	1	20
<i>Diseases of the Digestive System—</i>									
Hypertrophy of tonsils and adenoids,	—	1	—	—	1	3	9	9	72
Acute tonsillitis or pharyngitis, ...	—	—	1	—	2	1	7	2	14
Gastritis, ...	—	—	3	3	4	1	2	—	—
Gastric and duodenal ulcer, ...	—	—	—	—	—	—	—	—	—
Appendicitis, ...	—	—	—	—	—	—	1	2	1
Diarrhœa and enteritis, ...	—	—	113	103	50	30	12	8	—
Caries and other diseases of teeth and gums (dental cases), ...	—	1	—	—	—	1	3	2	2
Hernia of abdominal viscera,... ..	—	—	15	1	7	2	2	1	—
Hæmorrhoids, ...	—	—	—	—	—	—	—	—	—
Other diseases, ...	—	—	6	3	11	4	6	8	2

RAL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER, 1932.—Continued.

PS.

F.	-45		-65		-75		+75		Total.		Grand Total.	Deaths.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	Total.
1	60	22	54	12	11	1	1	—	129	36	165	21	5	26
1	6	9	104	71	123	73	40	31	275	186	461	145	117	262
5	28	36	29	17	4	—	—	—	106	100	206	7	4	11
4	69	44	44	30	3	2	1	—	128	92	220	—	—	—
—	—	1	—	—	—	—	—	—	—	3	3	—	—	—
8	13	17	8	2	—	—	—	—	32	29	61	2	4	6
4	224	200	162	148	26	41	3	8	476	474	950	14	6	20
2	10	12	3	1	—	—	—	—	57	38	95	—	—	—
3	2	—	—	1	—	—	—	—	6	12	18	5	8	13
0	62	54	69	52	12	15	3	4	164	149	313	14	11	25
4	16	15	13	16	4	4	—	1	38	41	79	—	1	1
2	18	5	16	5	9	3	—	1	78	50	128	—	—	—
8	40	8	8	4	1	2	—	—	83	31	114	1	—	1
8	20	9	3	4	1	1	—	—	76	66	142	2	3	5
3	58	73	136	91	52	28	21	11	310	261	571	117	91	208
—	21	19	108	68	86	41	41	40	260	172	432	129	111	240
—	5	3	64	24	54	19	24	12	147	58	205	50	23	73
—	18	10	52	32	11	11	2	5	87	58	145	1	—	1
—	3	4	20	3	6	1	—	—	29	8	37	9	1	10
3	71	41	66	31	20	17	4	12	596	494	1,090	248	192	440
3	107	53	46	32	6	7	2	2	501	423	924	24	21	45
3	229	108	397	212	189	107	55	56	905	527	1,432	116	71	187
2	79	54	75	30	17	6	2	—	228	149	377	24	7	31
0	4	2	1	—	—	—	—	—	744	778	1,522	—	—	—
3	22	23	5	3	—	1	—	2	60	65	125	—	—	—
3	188	35	77	29	13	18	8	4	314	103	417	3	—	3
0	131	9	42	5	4	1	1	—	186	16	202	6	5	11
0	41	16	4	5	—	—	1	—	76	42	118	5	2	7
1	11	15	11	6	8	2	2	—	213	170	383	75	60	135
0	207	175	29	19	1	2	1	1	314	265	579	—	—	—
—	37	3	48	16	17	5	4	2	139	34	173	8	4	12
—	46	3	26	5	3	2	1	—	77	10	87	1	—	1
1	67	56	87	45	20	24	3	6	240	184	424	20	20	40

TABLE II.—NUMBER OF DISMISSALS AND DEATHS IN THE CORPORA

DISEASES.	Not Stated.		- 1		- 3		- 5		M	
	M.	F.	M.	F.	M.	F.	M.	F.		
<i>Diseases of Genito-Urinary System—</i>										
Acute nephritis, ...	—	—	—	—	—	3	3	4	8	
Chronic nephritis, ...	—	—	—	—	—	—	—	—	4	
Prostatitis, ...	—	—	—	—	—	—	—	—	—	
Stricture, ...	—	—	—	—	—	—	—	—	—	
<i>Diseases of the Female Generative</i>										
Organs, ...	—	—	—	—	—	2	—	—	—	
Other diseases of genito-urinary system,	—	—	5	3	2	1	3	2	16	
<i>Pregnancy and disease connected with</i>										
<i>child-bearing,</i>	—	—	—	—	—	—	—	—	—	
<i>Born in Hospital,</i>	—	—	1,212	1,115	—	—	—	1	—	
<i>Diseases of the skin,</i>	—	1	39	21	42	30	38	17	59	
<i>Inflammation of cellular tissue, in-</i>										
<i>cluding acute inflammation of</i>	—	—	—	—	—	—	—	—	—	
<i>lymphatic glands,</i>	—	—	9	10	32	19	13	11	59	
<i>Acquired deformities of bones, joints,</i>										
<i>&c.,</i>	—	—	—	—	—	—	—	1	—	
<i>Inflammation of bones, joints, and</i>										
<i>organs of locomotion, excluding</i>	—	—	—	—	—	—	—	—	—	
<i>tuberculosis and rheumatism,</i> ...	—	—	1	1	2	3	2	1	—	
<i>Diseases, injuries, and malformation</i>										
<i>of the newly-born,</i>	—	—	24	19	—	—	—	—	—	
<i>Congenital malformations and defor-</i>										
<i>mities (under 5 years),</i>	—	—	15	4	13	2	2	3	—	
<i>Congenital malformations and defor-</i>										
<i>mities (over 5 years),</i>	—	—	—	—	—	—	—	—	—	
<i>Diseases peculiar to infancy and child-</i>										
<i>hood,</i>	—	—	69	53	15	16	5	2	—	
<i>Rickets and malnutrition,</i>										
...	—	—	13	13	15	8	5	4	—	
<i>Accidents and injuries—fractures,</i> ...										
Others, ...	—	1	—	1	21	11	9	4	5	
<i>Poisoning,</i>										
...	—	—	—	—	—	—	—	—	—	
<i>Alcoholism—</i>										
Including acute alcoholism, alcoholic										
gastritis, delirium tremens, alco-	—	—	—	—	—	—	—	—	—	
holic cirrhosis, &c., ...	—	—	—	—	—	—	—	—	—	
<i>Senility—</i>										
Old age, including senile dementia and										
senile gangrene, ...	—	—	—	—	—	—	—	—	—	
<i>Debility following operations, child-</i>										
<i>birth, and acute infections,</i> ...	—	—	—	3	1	3	1	—	—	
<i>Disease ill-defined or not specified,</i> ...										
...	—	1	2	1	7	7	3	3	4	
<i>No appreciable disease,</i>										
...	1	—	126	104	69	64	57	56	20	
	1	9	1,958	1,733	595	509	336	285	1,86	

GENERAL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER, 1932.—*Continued.*
 JPS.

	-45		-65		-75		+75		Total.		Grand Total.	Deaths.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	Total.
5														
8	9	18	12	8	3	—	—	—	43	52	95	5	7	12
1	11	20	42	21	13	6	3	1	74	49	123	45	22	67
—	—	—	13	—	24	—	18	—	55	—	55	18	—	18
—	6	—	23	—	8	—	1	—	39	—	39	6	—	6
7	—	266	—	42	—	7	—	1	—	395	395	—	9	9
23	53	54	35	31	21	10	7	2	162	140	302	12	6	18
73	—	2,096	—	19	—	—	—	—	—	3,593	3,593	—	43	43
—	—	—	—	—	—	—	—	—	1,212	1,116	2,328	54	32	86
9	69	32	64	26	13	9	4	4	372	233	605	1	—	1
2	80	73	49	27	9	14	3	1	291	256	547	6	5	11
7	17	1	14	5	4	4	—	1	54	23	77	1	1	2
—	13	9	14	5	5	1	1	—	52	24	76	4	1	5
—	—	—	—	—	—	—	—	—	24	19	43	19	17	36
—	—	—	—	—	—	—	—	—	30	9	39	2	2	4
2	3	—	—	—	—	—	—	—	14	3	17	1	—	1
—	—	—	—	—	—	—	—	—	92	77	169	45	30	75
—	—	—	—	—	—	—	—	—	42	29	71	1	2	3
2	23	9	40	30	22	30	7	19	129	98	227	15	12	27
0	35	22	48	26	15	13	13	12	211	122	333	11	4	15
1	—	2	1	1	—	—	—	—	1	6	7	—	—	—
—	42	8	48	15	8	4	—	—	99	27	126	7	—	7
—	—	—	24	20	127	91	125	147	276	258	534	109	88	197
0	11	15	8	5	1	2	—	—	29	38	67	—	—	—
8	28	41	24	16	4	4	1	—	125	118	243	—	—	—
9	43	25	23	5	2	3	3	—	548	461	1,009	—	—	—
33	2,948	4,215	2,876	1,709	1,155	796	455	444	12,973	13,770	26,743	1,792	1,303	3,095

TABLE III.—TABLE SHOWING THE METHOD OF ADMISSION OF ALL CASES DISMISSED FROM THE GENERAL HOSPITALS DURING THE YEAR.

Method of Admission.	Stobhill Hospital.	Eastern District Hospital.	Western District Hospital.	Southern General Hospital.	Total.
On certificate of District Medical Officer, ...	5,591	1,077	777	2,232	9,677
On certificate of other practitioner, ...	4,800	1,053	901	1,067	7,821
Per hospital consultant, ...	147	64	13	7	231
Per specialist clinic, ...	21	312	195	64	592
Transferred from other Corporation General Hospital, ...	100	26	12	10	148
From infectious disease hospital, ...	150	5	2	15	172
From voluntary hospital, ...	192	37	3	33	265
From poorhouse, ...	208	7	—	364	579
From Maternity Hospital (including overflows), ...	997	22	69	9	1,097
Gate admissions, ...	33	642	1,046	29	1,750
Arrangements with other Authorities, ...	24	2	—	—	26
Born in hospital (legitimate), ...	1,019	352	504	98	1,973
Born in hospital (illegitimate), ...	227	35	53	40	355
Per Public Assistance Department, ...	212	1	1	2	216
Per prison or police, ...	129	76	3	19	227
From asylums, ...	29	5	—	16	50
Per Education Health Service, ...	6	—	1,458	3	1,467
Per Tuberculosis Officer, &c., ...	61	—	2	—	63
Others, ...	27	2	3	2	34
	13,973	3,718	5,042	4,010	26,743

TABLE IV.—TABLE SHOWING DISPOSAL OF CASES DISMISSED FROM THE GENERAL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER, 1932.

To—	To—
Own home, ... 20,285	Tuberculosis Hospital, ... 30
Other Corporation General	Poorhouse, ... 804
Hospitals, ... 207	Own Parish, ... 69
Asylum, ... 488	Public Assistance Dept., ... 46
Convalescent Home, ... 597	Police, ... 32
Voluntary Hospital, ... 10	Boarded-Out,... .. 384
Out-patient Clinic, ... 250	Died, ... 3,095
Infectious Disease Hospital, 403	Others 43
	26,743

TABLE V.—RETURN OF OPERATIONS PERFORMED IN GENERAL HOSPITALS FROM 1ST JANUARY TO 31ST DECEMBER, 1932.

	STOBHILL.			EASTERN DISTRICT.			WESTERN DISTRICT.			SOUTHERN GENERAL.			TOTALS.		
	No. of Operations, A	B	C	No. of Operations, A	B	C	No. of Operations, A	B	C	No. of Operations, A	B	C	No. of Operations, A	B	C
1. Operations on Brain, ...	15	40	5	—	—	—	—	—	—	1	—	—	16	40	5
2. Operations on Spinal Cord and Peripheral Nervous System, ...	15	13	—	—	—	—	—	—	—	3	6	—	18	19	—
3. Operations on Thorax, other than Induction of Pneumothorax, ...	3	27	6	—	—	—	1	2	—	4	3	—	8	32	6
4. Operations for Induction of Pneumothorax, ...	—	18	—	—	—	—	—	—	—	—	—	—	—	18	—
5. Operations on Blood Vessels (excluding Varicose Veins and Hæmorrhoids), ...	—	9	8	1	—	—	—	—	—	1	—	—	2	9	8
6. Operations for Varicose Veins, ...	1	1	2	—	—	—	—	—	—	3	1	—	4	2	2
7. Operations for Hæmorrhoids, ...	36	—	2	3	—	1	2	—	3	10	—	—	51	—	6
8. Operations on Digestive System—Abdominal Section (excluding Appendicectomy), ...	89	—	—	12	—	—	12	1	—	26	—	—	139	1	—
9. Appendicectomy, ...	22	—	—	26	—	—	15	—	—	28	—	—	91	—	—
10. Herniotomy, ...	58	2	—	13	—	—	18	—	—	25	—	—	114	2	—
11. Other Operations on Digestive System, ...	2	3	4	2	—	1	—	1	—	5	2	—	9	6	5
12. Operations on Genito-Urinary System, ...	144	—	81	18	3	—	32	7	2	15	—	30	209	10	113
13. Operations on Female Organs of Generation (<i>i.e.</i> , Gynaecological Operations), ...	82	1	2	92	—	—	88	—	1	16	—	—	278	1	3
14. Operations for Excision of Cancer of the Breast, ...	4	—	—	—	—	—	—	1	—	—	—	—	4	1	—
15. Operations for Insertion of Radium in Malignant Disease, ...	42	2	7	—	—	—	—	—	—	—	—	—	42	2	7
<i>Carried forward, ...</i>															

TABLE V.—RETURN OF OPERATIONS PERFORMED IN GENERAL HOSPITALS FROM 1ST JANUARY TO 31ST DECEMBER, 1932.—*Continued.*

	STOBHILL.			EASTERN DISTRICT.			WESTERN DISTRICT.			SOUTHERN GENERAL.			TOTALS.		
	No. of Operations.			No. of Operations.			No. of Operations.			No. of Operations.			No. of Operations.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
<i>Brought forward, ...</i>															
16. Operations on Bones, Joints, and Organs of Locomotion, ...	95	—	17	15	—	—	13	1	—	19	—	3	142	1	20
17. Amputations of Arm, Hand, Leg, or Foot,...	9	—	—	4	—	—	—	—	—	10	—	—	23	—	—
18. Amputations of Fingers or Toes, ...	—	—	—	—	—	—	—	—	—	2	—	—	2	—	—
19. Incisions for Acute Abscesses and Cellulitis, ...	216	4	3	51	7	—	52	23	2	58	28	—	377	62	5
20. Operations on Skin, Subcutaneous Tissues and Superficial Lymphatic Glands, ...	39	5	1	13	1	—	8	9	10	6	3	2	66	18	13
21. Operations on Throat and Nose (excluding removal of Tonsils and Adenoids), ...	45	200	35	—	1	—	—	—	—	1	3	—	46	204	35
22. Operations for Removal of Tonsils and Adenoids, ...	98	18	—	—	—	—	1,418	—	—	28	—	—	1,544	18	—
23. Operations on Eye, ...	38	85	11	—	—	—	—	—	—	—	—	—	38	85	11
24. Operations on Ear, ...	99	31	67	—	—	—	15	—	—	3	—	—	117	31	67
25. Operations on Teeth and Gums, ...	463	26	3	260	6	—	194	—	—	38	29	—	955	61	3
26. Obstetric Operations, ...	430	—	3	114	—	—	154	—	4	122	—	—	820	—	7
27. Diathermy, ...	14	6	—	—	—	—	—	—	—	—	—	—	14	6	—
	2,059	491	257	624	18	2	2,022	45	22	424	75	35	5,129	629	316

Note.—A. With general or spinal anaesthetic. B. With local anaesthetic. C. Without anaesthetic.

DIABETES.—SUPPLY OF INSULIN.

Supplies of insulin are given to persons whose circumstances warrant such assistance and who are not already provided for under the National Insurance Scheme or Public Assistance.

There were 68 new applicants during the year—53 of these were married women or widows; 4, while of insurable age, were outwith the National Insurance Scheme; 5 had ceased to be insured; 3 were under 16 years of age; and 3 were patients in Corporation hospitals.

Cases on Roll at 31st December, 1931, ...	123
Cases applying for first time during 1932, ...	68
Cases who discontinued treatment prior to 31st December, 1931, but reapplied during 1932,...	13
	81
Cases who died during 1932, ...	19
Cases who discontinued supply during 1932, ...	41
	60
Leaving Cases on Roll at 31st December, 1932, ...	144

The 41 cases who discontinued treatment were visited and enquiries made as to the reason. These may be summarised as follows:—

Removed beyond City Boundary, ...	4
Discontinued on Medical Advice, ...	10
Discontinued of own accord, ...	15
To get supplies from P.A.D.,... ..	3
Hospital Cases now dismissed, ...	2
Other reasons, ...	7
	41

The daily dosage of the cases on the roll at 31st December, 1932, is as follows:—

No. of Cases.	Daily Amount.
—	Under 5 units.
20, ...	5 to 14 units.
32, ...	15 to 24 units.
29, ...	25 to 34 units.
17, ...	35 to 44 units.
15, ...	45 to 54 units,
19 , ...	55 units and over.
8, ...	Receiving double strength Insulin.
4, ...	Not stated.
144	

During the year 13,348 phials of ordinary strength insulin (100 units per 5 ccs.), 786 phials of double strength (200 units per 5 ccs.), and 36 phials of extra double strength (400 units per 5 ccs.) were issued, the total cost being £1,115 8s. The corresponding figures for 1931 were 11,248 phials, at a cost of £779 5s. 4d.

PART IV

MENTAL HOSPITALS.

In the report for the year 1931 the problems associated with the shortage of accommodation in the Mental Hospitals belonging to the Corporation were discussed in detail and at considerable length. In accordance with the recommendations made in the reports to provide additional accommodation at Hawkhead, detailed specifications were drawn up respecting the nature and extent of the accommodation required, and the Corporation approved of the proposal to provide 200 additional beds at Hawkhead. Owing to financial considerations, however, this extension has not yet been proceeded with, and the difficulty in finding accommodation in the Mental Hospitals for certified cases has become more and more acute. In the absence of this additional accommodation various expedients have had to be adopted to allow of the existing accommodation being utilised to the greatest possible advantage, including, within the institutions themselves, the reclassifying of the patients, and in this way a few extra beds have been made available. In spite of these measures, however, the general state of gross overcrowding still persists, and it is unlikely that any relief will be obtained till new accommodation is provided.

For some years past a certain amount of relief has been obtained by boarding-out Glasgow cases in other asylums throughout Scotland, but during the past year it has become increasingly difficult to obtain such accommodation owing to the fact that these institutions have now almost reached the saturation point and any accommodation falling vacant in them is required for cases occurring within their own areas; indeed, requests are being received from some of the outside authorities for the removal of the Glasgow cases.

Boarding-out of cases with private guardians has been continued to a certain extent throughout the year, but as the patients who are suitable for boarding-out must of necessity be of the quiet harmless type who do not require observation, the numbers are limited and the relief afforded to the general overcrowding is negligible.

During the year the Corporation decided to recondition a portion of the Southern General Hospital known as the South Block with a view to providing an extension of the wards licensed for the reception of insane persons. This extension amounted to some 160 beds, and, towards the end of November, 110 males were transferred from the existing licensed wards to the new accommodation. After a few alterations and re-decoration have been carried out, the wards vacated by these patients will be utilised for the reception of female cases. When the alterations have been completed there will thus be 220 beds for females and 160 beds for males instead of 110 for each sex as existed before the utilisation of the South Block. These licensed wards are not for the reception of acute cases but are restricted to quiet harmless insane persons of a chronic type who do not require active treatment, and consequently the relief to the general shortage of accommodation for recent acute cases will be obtained only very gradually after internal rearrangements by further re-classification of patients have been carried out in each of the Mental Hospitals.

The mental observation wards at Stobhill, Eastern District, and Southern General Hospitals have been utilised to their utmost capacity in dealing with early recoverable cases of mental illness. These wards have the status of medical wards of a general hospital, and consequently only patients who express their willingness to go to them for treatment may be admitted, and in all cases they go as voluntary patients. Only in exceptional circumstances is objection raised by the patient, and in these cases direct admission to one of the Mental Hospitals is sought.

Reference to the appended table giving the number of patients treated during the year will clearly demonstrate the useful purpose these wards fulfil in the treatment of early cases without incurring the stigma of certification which still persists in the minds of the public when an individual is sent to a Mental Hospital for treatment. It will be observed that out of 1,954 cases treated in the observation wards only 423, or less than 22 per cent., were sent to asylums, while 1,083 were discharged to their homes and 200 died. Better results might have been obtained but for the fact that many of the cases admitted were of the senile type who, owing to restlessness and dementia consequent on the disintegrative changes of old age, were unsuitable for treatment at home or in the ordinary wards of a general hospital. Very little hope of improvement can be entertained for cases of this type, and consequently they continue to occupy beds in the observation wards for weeks or months in many cases. Another large group comprises mental defectives who are sent to the observation wards on account of the shortage of accommodation in the certified institutions for mental

defectives. Many of these cases are sent to the wards on account of misbehaviour or altered circumstances at home, and have to remain under observation until accommodation becomes available in certified institutions or with guardians. It is hoped that the completion of Lennox Castle Institution will relieve the strain on the observation wards from this cause.

The treatment of cases of general paralysis of the insane by means of benign tertian malaria has been continued throughout the year with good results. Of 50 cases admitted to Stobhill, 34 have been treated by means of malaria and of these 16 have been discharged home in a greatly improved state of health, 10 showed no marked improvement, and 8 died. Of 15 patients who received no malarial treatment, 2 improved, 5 showed no marked improvement, and 8 died. Arrangements have been made whereby cases of general paralysis of the insane discharged home after treatment with malaria will continue under periodic observation and treatment at a V.D. clinic convenient to their homes.

It is impossible to give a complete analysis of all the cases treated in the various observation wards, but at Stobhill, where the great majority of the patients were dealt with, the following types of cases were treated:—

States of anxiety and depression, ...	151
Senility, ...	143
Expressing delusional ideas, ...	100
States of confusion, ...	99
Schizophrenics, ...	86
States of excitement and mania, ...	76
Alcoholics, ...	75
Mental defectives, ...	73
Epileptics, ...	64
General Paralysis, ...	50
Cerebral Syphilis, ...	50
Neurasthenics, ...	46
Suicidal attempts, ...	42
Manic depressive psychoses, ...	40
Mental disorder associated with Puerperium, ...	18
Mental disorder associated with Encephalitis Lethargica, ...	10
Hysteria, ...	8
Chorea, ...	6
Mental illness associated with Menopause, ...	5
Paranoia, ...	4
Tuberculous Meningitis, ...	5
Cerebro-spinal Meningitis, ...	1
Cretinism, ...	3
Disseminated Sclerosis, ...	2
Mental disorder associated with Pregnancy, ...	1

Under the heading of suicidal attempts are included only those cases who had definitely attempted suicide whether by drowning, gassing, poisoning, cut-throat, or other injury. Many of these attempts were made on impulse during a state of temporary depression, and after treatment in the wards a large proportion of them recovered and were allowed to go home.

The following table shows the number of cases treated in the observation wards during the year and their disposal:—

MENTAL OBSERVATION WARDS.

	STOBHILL.			EASTERN DISTRICT.			SOUTHERN GENERAL HOSPITAL.			TOTAL.	
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F. Total.
Remaining at 31st December, 1932,	95	61	156	25	21	46	12	8	20	132	90 222
Admitted during 1932, ...	606	554	1,160	243	202	445	70	57	127	919	813 1,732
Number treated during year 1932, ...	701	615	1,316	268	223	491	82	65	147	1,051	903 1,954
Number discharged home or transferred to Poorhouse during 1932, ...	413	376	789	117	84	201	51	42	93	581	502 1,083
Number died during 1932, ...	87	55	142	32	18	50	5	3	8	124	76 200
Number removed to Asylum, ...	108	95	203	94	98	192	14	14	28	216	207 423
Number remaining as at 31st December, 1932, ...	93	89	182	25	23	48	12	6	18	130	118 248

The three Mental Hospitals at Gartloch, Woodilee, and Hawkhead have continued to fulfil their functions throughout the year, and in the following tables will be found the details:—

TABLE I.
SHOWING ADMISSIONS, DISCHARGES AND DEATHS IN THE MENTAL HOSPITALS DURING THE
YEAR ENDED 31ST DECEMBER, 1932.

	GARTLOCH.			WOODILEE.			HAWKHEAD.			TOTALS.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
On Register at 31st December, 1931, ...	446	383	829	678	560	1,238	471	381	852	1,595	1,324	2,919
Number of Cases admitted during the year, ...	30	76	106	66	44	110	103	78	181	199	198	397
Total Cases under care during the year, ...	476	459	935	744	604	1,348	574	459	1,033	1,794	1,522	3,316
Cases discharged and died during the year—												
Recovered, ...	9	9	18	7	11	18	34	27	61	50	47	97
Not recovered, ...	6	8	14	9	8	17	2	2	4	17	18	35
Died, ...	20	41	61	44	35	79	32	22	54	96	98	194
Transferred to other Institutions in Scotland, and boarded-out in private dwellings, ...	4	6	10	1	3	4	5	9	14	10	18	28
Total Cases discharged and died during the year, ...	39	64	103	61	57	118	73	60	133	173	181	354
Total Cases on Register at 31st December, 1932, ...	437	395	832	683	547	1,230	501	399	900	1,621	1,341	2,962

TABLE II.

SHOWING THE LENGTH OF RESIDENCE IN THE MENTAL HOSPITALS OF CASES DISCHARGED RECOVERED
AND OF CASES WHO HAVE DIED DURING THE YEAR ENDED 31ST DECEMBER, 1932.

Length of Residence.	GARTLOCH.				WOODLEE.				HAWKHEAD.				TOTALS.			
	Recovered.		Died.		Recovered.		Died.		Recovered.		Died.		Recovered.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Under 1 month, ...	...	—	—	6	—	1	4	1	1	—	5	1	1	1	9	8
1 to 3 months, ...	...	—	—	4	—	1	3	—	4	3	2	1	4	6	5	5
3 to 6 „ ...	...	2	5	—	3	1	4	3	—	10	9	—	3	13	3	6
6 to 9 „ ...	...	2	1	1	1	1	—	1	4	6	2	5	7	8	3	7
9 to 12 „ ...	...	1	—	—	3	1	—	—	4	1	3	—	8	2	3	—
1 to 2 years, ...	...	2	1	1	7	1	2	9	7	7	5	1	4	10	8	11
2 to 5 „ ...	...	1	—	4	9	1	1	5	11	4	3	4	3	6	4	13
Over 5 „ ...	...	1	—	14	11	—	—	20	15	—	—	15	5	1	—	49
Totals, ...	...	9	9	20	41	7	11	44	35	34	27	32	22	50	47	96

TABLE III.

SHOWING THE FORMS OF MENTAL DISORDER IN THE ADMISSIONS, RECOVERIES
AND DEATHS IN THE MENTAL HOSPITALS DURING THE YEAR 1932.

Forms of Mental Disease.	Admissions.			Recoveries.			Deaths.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
<i>Inherent Developmental Defects—</i>									
Mental Deficiency—									
(a) Idiocy, ...	3	1	4	—	—	—	2	1	3
(b) Imbecility, ...	8	6	14	1	—	1	5	5	10
(c) Feeble mindedness, ...	3	3	6	—	1	1	—	1	—
(d) Moral Imbecility, ...	5	—	5	—	—	—	—	—	—
Epileptic Insanity, ...	10	8	18	4	1	5	7	9	16
Schizophrenia—									
(a) Simple, ...	18	2	20	6	1	7	1	—	—
(b) Hebephrenia, ...	11	12	23	3	2	5	5	2	—
(c) Katatonic, ...	1	6	7	—	—	—	1	3	—
(d) Paranoid, ...	15	17	32	3	1	4	—	2	—
Paraphrenia, ...	3	13	16	—	4	4	—	3	—
Paranoia, ...	7	3	10	—	—	—	10	4	14
<i>Psychoneurosis—</i>									
(a) Neurasthenia, ...	—	—	—	—	—	—	—	—	—
(b) Psychasthenia, ...	—	—	—	1	—	1	—	—	—
(c) Hysteria, ...	1	1	2	—	—	—	—	—	—
<i>Toxic and Confusional Psychosis—</i>									
Manic-Depressive Psychosis, ...	36	27	63	15	13	28	13	10	23
Acute Delirium, ...	—	1	1	—	—	—	—	4	—
Acute Confusion, ...	6	36	42	6	12	18	4	1	—
Stupor, ...	—	—	—	—	—	—	—	—	—
Alcoholic Insanity—									
Delirium Tremens, ...	—	1	1	—	1	1	—	—	—
Mania a Potu, ...	—	1	1	—	1	1	—	—	—
Korsakoff's Psychosis, ...	—	1	1	—	—	—	—	—	—
Chronic Alcoholic Insanity, ...	19	4	23	1	—	1	2	1	—
Cocaine, Morphinic, and other Drug Insanities, ...	—	—	—	—	—	—	—	—	—
Involutional Psychosis, ...	4	11	15	1	5	6	—	2	—
<i>Acquired Defects—</i>									
Pre-senile Psychosis, ...	3	—	3	2	—	2	1	—	—
Senile Dementia—									
(a) Simple, ...	7	18	25	4	2	6	14	21	—
(b) With Mania, ...	1	7	8	—	1	1	3	2	—
(c) With Depression, ...	2	2	4	—	—	—	—	2	—
(d) With Presbyophrenia, ...	—	1	1	—	—	—	—	1	—
General Paralytic Dementia, ...	19	5	24	1	—	1	13	11	—
Traumatic Dementia, ...	1	—	1	—	—	—	—	—	—
Organic Dementia—									
(a) Tumor, ...	—	—	—	—	—	—	—	—	—
(b) Gummata, ...	—	—	—	—	—	—	—	—	—
(c) Arterio-Sclerosis, ...	11	5	16	1	2	3	10	9	—
(d) Meningitis, ...	—	—	—	—	—	—	—	—	—
(e) Encephalitis, ...	3	3	6	1	—	1	1	1	—
(f) Other Cerebral Diseases, ...	2	3	5	—	—	—	4	3	—
	199	198	397	50	47	97	96	98	194

TABLE V.

SHOWING THE PROBABLE CAUSES OF INSANITY IN THE PATIENTS
ADMITTED TO THE MENTAL HOSPITALS DURING YEAR ENDED
31st DECEMBER, 1932.

Etiological Factors.					Males.	Females.	Total.
1.	Mental Stress,	...	...	...	10	27	37
2.	Adolescence,	...	...	...	7	3	10
3.	Pregnancy,	...	...	...	—	—	—
4.	Puerperium,	...	...	...	—	13	13
5.	Climacteric,	...	...	...	3	18	21
6.	Senility,	...	...	...	8	18	26
7.	Bodily Ill-health and Exhaustion,	...	...	...	16	18	34
8.	Alcoholism and Drug Addiction,	...	...	...	33	9	42
9.	Syphilis,	...	...	...	23	6	29
10.	Constitutional Inferiority,	...	...	...	36	39	75
11.	Organic Brain Disease,	...	...	...	8	3	11
12.	Epilepsy,	...	...	...	9	4	13
13.	Disorders of Ductless Glands,	...	...	...	—	1	1
14.	War Strain,	...	...	...	5	—	5
15.	Congenital,	...	...	...	18	11	29
16.	Encephalitis Lethargica,	...	...	...	3	4	7
17.	Injury,	...	...	...	6	—	6
18.	Previous Attack,	...	...	...	6	9	15
19.	Huntingdon's Chorea,	...	...	...	1	—	1
20.	Acute Infective Illnesses,	...	...	...	—	—	—
21.	Unascertained,	...	...	...	7	15	22
Totals,					199	198	397

In connection with this table, it should be borne in mind that in the causation of every mental illness there are many factors, each and all of which may have a distinct influence in precipitating the mental disorder. Such factors as personality, domestic and economic conditions, state of bodily health, and many others must be considered when assessing the probable cause of the condition. In this table the cause assigned in each case, although merely one of many factors, has been adjudged to have had an important bearing on the development of the illness.

Under the heading "mental stress" are included such conditions as domestic or business worries, adverse circumstances, &c., while under "bodily ill-health" are included malaria, influenza, gastric troubles, rheumatism, and the like.

GARTLOCH MENTAL HOSPITAL, GARTCOSH.

The number of patients on the register on the 31st December, 1932, was 832, composed of 437 males and 395 females, showing a decrease of 9 males and an increase of 12 females, compared with the corresponding figures for the same date of 1931. During the year 106 cases (30 males and 76 females) were admitted. This is the lowest number of admissions in a full year since the opening of the institution, and as in the previous year, was due to lack of accommodation.

The low number of recoveries (9 males and 9 females) reflects the serious or chronic character of the psychoses in the patients admitted, many of whom had been treated for considerable periods in the observation wards of the Eastern District and Stobhill Hospitals.

The death rate was again low, 20 males and 41 females having died during the year.

Eight males and 9 females were discharged relieved, or transferred to other institutions, and 2 males and 5 females were boarded-out in private dwellings. The average daily number of patients for the year was 829.5 (the highest in the history of the institution) compared with 815.6 for the previous year.

Health.—The health of the patients and staff during the year was good, except for a sharp epidemic of influenza, which commenced on the 12th December, following a few days of raw, cold weather with biting south-east winds. The disease, which was chiefly of the respiratory type, and, fortunately, as a rule mild in character, first appeared in the male asylum wards. On each of two consecutive days twenty male patients were attacked, which so severely taxed the already overcrowded hospital accommodation, that a dormitory had to be converted temporarily into a hospital ward. To make matters more difficult considerable numbers of the staff were attacked by the malady, and this rendered necessary the engagement of several temporary male nurses.

Coincident with a return to a westerly type of weather, with a rising temperature and heavy rainfall, the incidence of the disease diminished, but it was observed that in the later cases gastro-intestinal and neuritic forms of the disease appeared, and that the cases generally were more serious, and the period of illness prolonged.

In all about 130 male patients, 35 female patients, and about 60 members of the staff were attacked, and in 4 male patients influenza was the principal or contributory cause of death.

Electrical Equipment.—During the year the old coal-fired ranges in the hospital and asylum kitchens were scrapped and replaced by electrical cooking apparatus. Each kitchen is therefore equipped with a combination of steam and electrical cooking plant. Towards the end of May, 1932, the electrical cooking appliances in the hospital kitchen were put into operation, and in July the six large electrical fish-frying pans in the asylum kitchen were first used. The installations in both kitchens have proved a complete success. In the hospital where the food for 150 officials and staff is cooked, as well as some cooking for hospital patients, the average weekly consumption of current over a period of ten months has been about 350 units, which, at a cost of $\frac{1}{2}$ d. per unit, works out at something less than 15s. per week. In the asylum kitchen the electrical frying pans have enabled the kitchen staff to relieve the monotony of steamed and boiled foods. Fried filleted fish and chipped potatoes are now supplied to the patients every Friday, and compared with steamed fish and potatoes, the waste is negligible. The cost of electrical current, so far, has been about 8s. per week, but it is intended to extend the use of these appliances.

Staff.—At the end of the year 41 members of the female staff, and 44 members of the male staff held the Nursing Certificate of the Royal Medico-Psychological Association, and 13 members of the female and 4 members of the male staff were registered nurses under the General Nursing Council for Scotland. During the year 17 female and 6 male nurses passed the preliminary examination of the Royal Medico-Psychological Association, and 10 female and 4 male nurses the final examination of that Association. Three female nurses also passed the final examination in mental nursing of the General Nursing Council for Scotland.

Nurse Isabella Macrae Diack, who has been in the service of this institution since 15th July, 1910, was awarded one of the Morison prizes for meritorious attendance on the insane.

Patients' Entertainments.—The amusement and entertainment of the patients continue to be adequately catered for. In addition to the weekly dances and cinema entertainments, three concerts were provided by the Public Health Department of the Corporation. Several parties of patients were taken to the Kelvin Hall Carnival and Circus, and to several of the Christmas shows in the theatres. Part of the profits of the institution shop has been devoted to the purchase of gramophones and records, and also to provide motor bus excursions for the patients during the summer months.

A. M. DRYDEN,
Medical Superintendent.

HAWKHEAD MENTAL HOSPITAL.

The total number of patients under care and treatment during the year was 1,033 (574 men and 459 women), an increase of 15 from the previous year.

The total number resident on 31st December, 1932, was 900 (501 men and 399 women), or 48 more than the corresponding date of last year.

The daily average number resident was 481.2 men and 392.0 women, a total of 873.2.

Admissions.—During the year ended 31st December, 1932, 181 patients were admitted (103 men and 78 women); 95 men and 66 women were first admissions, and 8 men and 12 women were re-admissions.

The following table shows the ages of the patients admitted during the year:—

				Males.	Females.	Total.
Under 20 years of age,	...	...	...	5	1	6
Over 20 and under 30,	...	...	...	17	17	34
„ 30 „ 40,	...	...	...	27	19	46
„ 40 „ 50,	...	...	...	23	16	39
„ 50 „ 60,	...	...	...	13	7	20
„ 60 „ 70,	...	...	...	14	9	23
„ 70 „ 80,	...	...	...	4	4	8
„ 80, ...	...	...	...	—	5	5
				103	78	181

CLASSIFICATION OF MENTAL AFFECTIONS IN ADMISSIONS.

				Males.	Females.	Total.
Mental Deficiency,	...	...	...	5	3	8
Epileptic Insanity,	...	...	...	5	2	7
Schizophrenia,	...	...	...	22	17	39
Paraphrenia,	...	...	...	2	10	12
Manic-depressive Psychosis,	...	...	...	24	7	31
Acute Confusion (including 6 Puerperal),	...	...	...	1	14	15
Alcoholic Insanity,	...	...	...	15	1	16
Involutional Psychosis,	...	...	...	2	6	8
Pre-senile Psychosis,	...	...	...	3	0	3
Senile Dementia,	...	...	...	3	13	16
General Paralytica Dementia,	...	...	...	14	1	15
Organic Dementia,	...	...	...	7	4	11
				103	78	181

Nursing Certificate.—At the May examination for the certificate of the Royal Medico-Psychological Association, 4 nurses and 4 attendants passed the Final Examination, and 7 nurses and 10 attendants passed the Preliminary Examination. At the November examination 9 nurses and 1 attendant passed the Final Examination, and 6 nurses and 1 attendant passed the Preliminary Examination. One nurse passed the Final Examination of the General Nursing Council for Scotland.

Amusements.—The usual weekly dances and cinema shows were thoroughly enjoyed by the patients during the winter months. Increasing difficulty is being experienced in obtaining an adequate supply of suitable silent films. Various amateur dramatic clubs, concert parties, orchestras, and choirs are due thanks for very enjoyable performances. Through the kindness of the Manager of the Princess's Theatre, 200 patients were entertained at the Pantomime.

Outdoor recreations in the form of bowls, football, and tennis have been encouraged and enjoyed by patients and staff.

JAS. H. MACDONALD,
Medical Superintendent.

WOODILEE MENTAL HOSPITAL.

During the year 1932, 110 patients (66 males and 44 females) were admitted. This is the lowest number admitted since the hospital was opened and is 28 lower than last year. The cause of the low admission rate is only to be accounted for by the lack of accommodation for new cases.

The hospital wards and the observation wards are still hopelessly overcrowded, and the Nurses' Home also is still very overcrowded.

Over 70 per cent. of the new admissions were suffering from an incurable form of mental disorder, and the recovery rate was, therefore, extremely low.

The health of the patients has been good, and the number of deaths, 79 (44 males and 35 females), is 20 lower than last year.

HENRY CARRE,
Medical Superintendent.

STONEYETTS, LENNOX CASTLE, AND BLINKBONNY CERTIFIED INSTITUTIONS.

The accommodation is still fully taxed at these institutions, so that few changes are to be recorded in admissions, &c., during the year 1932.

The following are the details regarding such changes:—

	Males.	Females.	Total.
On Register, 31st December, 1931, ...	288	266	554
Admissions, ...	7	11	18
Discharges, ...	3	7	10
Deaths, ...	3	7	10
On Register, 31st December, 1932, ...	289	263	552

Admissions—

From—

Eastern District Hospital, ...	1	1	2
Stobhill Hospital, ...	2	2	4
Waverley Park Certified Institution, ...	—	2	2
Larbert Certified Institution, ...	—	1	1
State Institution, Perth, ...	1	—	1
Baird St. Reception House, Glasgow, ...	—	1	1
Inveresk Home, Musselburgh, ...	1	—	1
Own Homes, ...	2	2	4
From other Certified Institutions, ...	—	2	2

Grade of Mental Defect of Admissions—

Idiots, ...	—	—	—
Imbeciles, ...	4	3	7
Feeble-minded, ...	3	8	11
Moral Imbeciles, ...	—	—	—

Discharges—

To other Institutions, ...	1	2	3
Discharged to care of friends, ...	1	5	6
Discharged on expiry of Certificate, ...	1	—	1

The general health of the patients and staff has been good, except at Lennox Castle, where many suffered from influenza. There is also a higher proportion of weakly low grade defectives in this institution.

The new occupational workshops at Stoneyetts have relieved the overcrowded state which previously existed in the general workshops.

The entertainments have been continued as formerly. Some difficulty has been experienced in procuring suitable films for the cinema owing to the scarcity of silent films. The various concert parties composed of patients from each of the institutions have enjoyed a successful season, and have also been invited to give performances to the patients of kindred institutions under other Authorities. The visits of the patients to the Carnival in the Kelvin Hall, and to the Pantomime at the Royal and Princesses Theatres were much appreciated.

The Scout and Guide organisations have continued their activities, and the various inspections have all been productive of good reports. A team from the Stoneyetts Troop of Scouts has recently gained the Marshall Trophy for Highland Dancing, which Trophy was competed for by Scouts in the Glasgow area.

West of Scotland Neuro-Psychiatric Research Institute.—Under the direction of Dr. Ford Robertson, a research is being conducted by the Medical Officers in Epilepsy, a disease which affects a large proportion of the population of these institutions.

Staff.—The training of the male and female nurses has been carried on as usual.

During the year 12 members of the nursing staff gained the Certificate of the Royal Medico-Psychological Association, one male nurse passing the examination with distinction.

Seven nurses passed the Preliminary Examination.

C. G. A. CHISLETT,
Medical Superintendent.

MENTAL DEFICIENCY.

The survey of cases of mental deficiency living in their own homes in the city has been continued during the year, but owing to the fact that a considerable number of years has elapsed since many of these cases were notified to the Parish Council by the Education Authority under the 1913 Act, a comparatively small proportion of those asked to attend put in an appearance at the clinic. On making enquiries it was found that some had died, others were in institutions, and many had removed from the district and their whereabouts was unknown. Those who were reported as unfit through physical or mental disability to attend the clinic will be visited at their own homes.

Out of a total number of 501 cases notified to attend the clinic during the year only 168 cases attended and 37 were placed on the list for home visitation. Of the 168 who were examined at the clinic, 108 were recommended for admission to a certified institution, 18 of these recommendations being considered a matter of urgency. Institutional treatment was considered advisable in these cases either on account of the mental condition of the defective or on account of unsatisfactory home conditions. Thirty-seven of those examined were recommended for low grade training at an occupation centre while remaining in their homes, and 22 were considered quite fit to remain under existing home conditions which were considered satisfactory.

The patients who were examined during the period under review were on the whole of a better type than those reviewed during the previous year. This is partly to be accounted for by the fact that they were generally older and had demonstrated their ability to keep out of mischief, the more unstable members of their group having been admitted to certified institutions or placed otherwise under guardianship.